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"FOR PROSPECTUS AND PREMIUMS, SEE LAST PAGE."

AGRICULTURAL METEOROLOGY.

IN the Patent Office Report for 1849, we called the attention of those interested in the agricultural literature of the United States to the importance of cultivating the science of meteorology in its relations to agriculture and horticulture. Since that time the subject has gradually attracted the regards of the earnest promoters of science in this country; and we now have before us a most instructive and interesting pamphlet, emanating from the Smithsonian Institution, entitled "Climate of the Summer of 1853 in its Relations to the Agricultural Interests of the United States. By LORIN BLODGET, Assistant in Charge of Meteorology."

A moment's reflection will satisfy any well-informed mind that temperature and rain are two of the most important elements of agricultural production. The record of these furnishes data of much value to practical farmers, as we will now attempt to demonstrate.

In the climate of Great Britain the mean summer temperature is barely sufficient to ripen wheat, rye, oats, barley, and a few other cereals, but not maize or rice—two important staples among American cereals. This meteorological fact suggests the idea, fully sustained by experience, that whenever the thermometer indicates a general reduction in the temperature of the months of April, May, June and July, a short crop of wheat in England and Scotland is inevitable. Had every wheat-grower in this country known the mean heat for an average of summers in Great Britain, and the fact that the spring and summer months for the year 1853 were considerably colder than usual, *a short crop* in the British Islands might have been inferred with great certainty. A few cultivators, who study agricultural meterology as a part of their profession, took note of this deficiency of solar heat in Western Europe, and predicted a material rise in breadstuffs. Some of these scientific observers held on to their crops, and now obtain from fifty to seventy-five per cent. advance for the products of their farms. The summer of 1853 was colder in Western Europe than it has been in the present century, save in the year 1816. In the year last named, the summer was unusually cold in the United States, as many of our older readers will bear witness. The summer of 1853 in this country was the reverse of that in Europe, it being uncommonly warm, and the aggregate yield of crops unusually large. Hence, we have a large surplus to export to England and France, and are reaping a golden harvest.

Deeply sensible of the value of trust-worthy meteorological statistics to all that produce grain, meat, butter, cheese, cotton, sugar, rice and fruits, and to all that deal in these great staples, we have done what we could to induce the intelligent and patriotic gentlemen connected with the Smithsonian Institution to give their admirable and extensive meteorological records an agricultural direction.

That Institution deserves great credit for having obtained so many reliable meteorological instruments, at no inconsiderable expense, for gratuitous distribution pretty equally over this vast empire, to be used by competent observers in collecting all needful facts bearing on this useful science. There is much force in the following remarks of Mr. BLODGET, as well as some reason to hope that these researches into the climatic variations in the several States and territories in connection with the agricultural interests of the republic, may be extended in future:

> The system of Meteorological Observation from which this imperfect summary of the conditions of the climate for the year just passed has been prepared, is capable of much greater definiteness of statement. The illustration of each condition might be much more full and detailed, and the discrimination of particular districts might be made more clear. The number of those who contribute valuable instrumental observations for some part of the year, and in form permitting comparisons of means for some months, is near five hundred—an amount of definite climatic observation without a parallel. This too is furnished for the most

part without other compensation than that afforded by the mutual exchange of results.

To render this mass of valuable matter promptly available in current deduction and comparison, and applicable in the measure of its full value to all the interests embraced by it, a force sufficient to prepare all of it for this prompt discussion is indispensable. With this adequate organization the whole research may be vitalized in a manner wholly impossible in other nations on a scale so commanding, and at an expense too small to deserve consideration; the greatest and most expensive service being already gratuitously performed by the unequaled energy of the scientific mind of the country.

We have reason to know that the distinguished Secretary of the Smithsonian Institution would gladly do far more for the advancement of rural arts and sciences than he now does, if there were funds at his disposal which could be applied to that purpose. Prof. HENRY is a working man, and not less practical and utilitarian than scientific in his views; but he, like the rest of mankind, is governed by circumstances which are often any thing than agreeable. Congress should give to the Institution the funds required to develop the true relations that subsist between the temperature of the atmosphere and that of different soils at several depths, and the growth of all agricultural plants. The annual fall of rain and snow, their distribution through the several months of the year, their bearing on the general fruitfulness of seasons, the humidity of the atmosphere connected with the absorptive power of common clay, of vegetable mold, of loam, sand, and a fair mixture of these, are facts in meteorological researches yet to be verified in this country.

In our "STUDY OF SOILS," this subject is discussed at considerable length; and the data furnished in the "Summer Climate of 1853," by the Smithsonian Institution, will enable us to extend our deductions over large sections of the Union from which we have heretofore received only the most meager meteorological statistics. By studying these statistics we shall realize a profit of thirty per cent. on our corn crop grown the past season, after it was ripe. A personal friend, who usually plants about 800 acres to this grain, exhibited to us a few days since on his farm well-matured ears of corn, the seed of which was put into the ground on the 16th of July—two months after wheat was harvested in his neighborhood. His corn, planted after the short crop in England was known to wise meteorologists, now sells at eighty cents a bushel.

We shall have more to say on the critical study of climate hereafter.

WHAT IS THE VALUE OF DISTILLERY SLOPS?

IN the December number of the *Farmer*, an esteemed correspondent, "S. W.," of Waterloo, in this State, made the following remarks:

It is susceptible of proof that the cooked slop of the distillery will fatten as many animals as the raw corn would have done before it was ground and passed through the still; and if the manure is saved and applied to the soil, nothing is lost—and I trust it will be admitted that the alcohol converted into a burning fluid, and for medicinal purposes, is something gained.

For many chemical and manufacturing purposes, as well as for medical uses and burning, alcohol is a valuable article of commerce. All our water-proof hats (which *are* water-proof) are made so by first dissolving gum shellac in alcohol, and then working the gum (which is insoluble in water) into the substance of hat bodies. When we wish to determine the quantity of sugar in any given amount of milk, it is first evaporated, then treated with hot sulphuric ether to dissolve and take up the butter, when alcohol will dissolve and remove the sugar of milk, leaving the curd or cheese pure. But our object is not to enumerate the economical uses of alcohol, whether in the arts or sciences, or to discuss the chemistry of whisky-making, although it is mainly an agricultural question, but simply to inquire into the value of distillery slops for the production of pork and beef.

If "cooked slop will fatten as many animals as the raw corn would have done before it was ground and passed through the still," as many distillers as well as our friend "S. W." think it will, how does it happen that where corn is worth fifty cents a bushel to feed to hogs, no one will pay over ten cents a bushel for the corn used to form "the cooked slop" of a distillery? We have seen not a little of this kind of feed for stock bought and sold; and the writer was, he believes, the first in Western New York to point out a process by which the essential oil that imparts to whisky its peculiar odor and flavor may be wholly removed, so that the pure spirit might be added to brandy, rum or gin, without impairing sensibly the peculiar flavor or strength of either, and at a time when these imported liquors were very expensive so far from seaports. We have seen good whisky sold in Western New York at twelve cents a gallon. When fourteen quarts of good whisky are extracted from fifty-six pounds of meal, what does our friend "S. W." suppose the grain has lost in the operation? Not a particle of alcohol existed, as such, in the meal. Fermentation is decomposition quite as much as combustion. In the common process of making raised bread, five per cent. of the flour is entirely consumed in forming the gas called carbonic acid, and alcohol. In making beer for distillation, fermentation is carried much further than in the manufacture of bread. Nearly all of the starch and sugar *(glucose)* in the grain is decomposed to generate so much spirit and gas; and were it not for the oil in corn, which may be seen floating on beer in still-tubs, and remains in the slop, as well as most of the protien compounds in the seed, no refuse from the still would be worth *one-fifth* the value of the grain for the production of meat. When corn is worth thirty cents for making beef and pork, the slop from such corn is worth about six cents to the bushel for a similar purpose.

Why does corn meal, whether cooked or raw, produce comparatively solid lard and pork, while the still-slop from the same meal yields very oily lard and pork? The fact alluded to is of some importance in the chemistry of nutrition—in animal and vegetable physiology. Seeds and plants that contain much starch and sugar, and comparatively little oil, produce solid fat, so called; while seeds (including all forest nuts eaten by swine, and called "mast") and plants rich in oil, yield soft and oily fat, tallow and butter. Add to still-slops as much starch as fermentation and distillation remove from the grain from which the slop

is derived, and it will make the same kind of pork that whole corn does. If hard dry corn makes harder pork than boiled corn, or than cooked meal (as it may), the reason is the defective digestion of dry corn, so that its oil is not converted into an emulsion, or soap, and goes not through the walls of the digestive organs, like oil converted into soap and the soap dissolved in water, to form a part of the blood, but passes on out of the system. A pound of starch is much easier of digestion than a pound of oil, especially if the starch be cooked, as in boiled potatoes. To cook oil in potatoes avails nothing; for oil can neither be boiled nor baked into solubility in water. If our Agricultural Societies were a little more enlightened, they would investigate the economical value of all slops, distilled and undistilled, and of all the organized elements in seeds, roots, tubers, apples, and other fruits—of grasses, clovers, peas, and other legumes—so that the best proportions of starch, sugar, oil, and protien compounds for feeding, would be known to every farmer. We have waited patiently thirty years to see the time come when the sciences of digestion, nutrition, fermentation, and manure-making, would receive that public attention which their importance demands.

Probably one or two hundred million bushels of corn have been fed to fatting animals in the United States in the last six months; and we have no doubt that full twenty-five per cent. of the nutritive substances in this grain have passed out of the bowels with the dung when these substances ought to have been digested, and passed directly into the blood vessels to form flesh and fat in the vital economy. In the last four years we have sent out about forty thousand circular letters from the Patent Office, which have gone into every county and parish in the nation; and in every letter there was an inquiry designed to ascertain, if possible, from practical farmers, what is the relation that subsists between the daily food of live stock and their growth, or gain in meat, and live weight. All the facts elicited were not so valuable as might be obtained by the judicious expenditure of $100. Suppose a distiller grinds, ferments and distills 1000 pounds of corn, and then dries all the slop which the corn produces, what will the latter weigh? Can any man in the United States answer this simple question correctly? We doubt it; because the line of research has been after more alcohol—the "fire water"—not after the elements required to produce good milk, butter, cheese, fat and lean meat. Although a friend to temperance, we have no prejudices against alcohol. In kitchen slops, and in beer formed from grain, alcohol doubtless aids in the fattening of pigs fed on such food, it being burnt like starch and sugar from which it is formed, to keep their bodies warm. Alcohol can not form fat or muscle, but it can be burnt in the system. Before vegetable substances form vinegar, they always go through with what is termed the vinous fermentation—that is, they form alcohol—and it is an inquiry of some moment whether a mash is better for cattle and swine with no fermentation, with the vinous, or with the acetous changes having taken place in the bruised grain, leaving the spirit in the one case, or the vinegar in the other, in the slop? Some will say that alcohol is an injury—others that it is a benefit; and similar opinions prevail in reference to the value of all slops. Why sour milk and sour feed are sometimes better than sweet milk and unfermented grain, we will endeavor to explain hereafter.

EXPERIMENTS IN FEEDING SHEEP, AND WITH MANURE.

At a recent meeting of the Fettercairn Farmers' Club in Scotland, Major McInroy read a paper giving an account of experiments made by him in feeding sheep in sheds; and in making manure under cover. The results of these experiments were most satisfactory, agreeing with and confirming conclusions arrived at in England as to the value of good shelter and dry bedding for sheep, when put up to fatten. They had all the turnips they would eat, and a quarter of a pound of crushed oats, and an eighth of a pound of oil cake, a day. On this feed they gained finely, and the wool and mutton sold for enough to pay all expenses and leave about a dollar per head profit, beside a good deal of rich manure. As the prices of lambs, grass and hay, turnips, oil cake, oat meal, and mutton, differ so much in Scotland from their value in this country, the details of Major McInroy's experiments are hardly worth to our readers the space they would occupy in our columns. One fact, however, stated by him is of great importance in farm economy: which is, that the dung of the same animals kept in a covered condition to prevent the escape of fertilizing gases, and under shelter to avoid the washing of rains, is worth about twenty-seven per cent. more than it would be if made in the usual way in an open yard. In the latter case, the farmer has to haul into his fields a great deal of rain water, and spread it in a laborious way over the ground. Valuable as rain water is to cultivated land, it will not pay to carry three tons of it to one ton of genuine manure out into the fields on wagons, carts, or sleds, in the usual way. From four-fifths so nine-tenths of common barn-yard manure hauled out in the spring consists of *water*, and nothing better. Nor is this all the defect inherent in such manure. Its exposure to rains for months dissolves out much of its best ingredients, which either run off on the surface of the ground, or soak into it. What remains is like old tea-leaves, that have been twice or thrice steeped; they, like washed manure, contain the insoluble woody fiber and a little coloring matter. There is a good deal of wood in the stems of grasses, which may be seen in the solid excrements of domestic animals. This is the poorest part of dung, and being insoluble, it constitutes the fine wood saturated with water which by courtesy is called manure, and often used as such, after the essential elements of fertility have departed.

It is far cheaper in the long run to grow rich food for all kinds of stock, and thereby produce fat animals and rich manure, than to raise very lean feed, and consequently have lean cattle, lean sheep, lean horses, and nearly worthless manure to put on lean land. Poor farmers make poor land, poor land yields poor crops, and poor crops make a community and a nation also poor. Hence, agricultural knowledge is of all things the most valuable to the public, yet of all things it is the most neglected by Congress

and by our State Legislatures. When or where did any American Legislature ever encourage the scientific investigation of either stable or barn-yard manure? Why should a Nation of Farmers, whose votes control all legislation, be forever dependent on Europe for experimental farming, seeing that the dung of their six hundred million dollars worth of live stock is worth more than all their foreign commerce? Can any man give a good reason why property to the amount of hundreds of millions in *the food of plants* is not as worthy of governmental care, as deserving of legislative assistance, as a smaller amount of property in ships and trade? We never complain of the aid extended to American commerce and manufactures; and we rejoice at the pains taken by government to advance and foster these important interests. But why stop short when the duty of legislation is less than half performed? A little assistance from Congress would put one hundred million dollars a year into the pockets of farmers, by putting a little more knowledge into their professional literature.

The able and experienced Scotch farmer whose experiments we have examined with pleasure and instruction, says that if barn-yards were covered with tile in the most durable manner, the shelter afforded to stock and manure would be equal to a high interest on the cost of the structure. Of this fact we have no doubt; but it ought to be demonstrated in the plainest manner by actual experiments, in every State in the Union, so that all husbandmen might see and fully appreciate the desirable improvement. We now send abroad many millions of dollars for wool and woolen fabrics every year, which ought to be produced in our own country.

THE POINTS FOR JUDGING FAT CATTLE.

Agreeably to our promise to devote more attention to stock in this volume of the *Genesee Farmer* than we had done in previous ones, we give below a lengthened and highly interesting article from the *Mark Lane Express*, on "The Points for Judging Fat Cattle." It will well repay the most careful perusal:

"The form of the carcass is the chief point in the shape of an ox. It is found, the nearer the section of the carcass of a fat ox, taken longitudinally vertical transversely vertical, and horizontally, approaches to the figure of a parallelogram, the greater quantity of flesh will it carry within the same measurement. That the carcass may fill up the parallelogram, as well as its rounded figure is capable of filling up a right-angled figure, it should possess the following configuration: the back should be straight from the top of the shoulder to the tail, and better if the straight line extends over the shoulder to the root of the horns; the tail should fall perpendicularly from the line of the back; the buttocks and twist should be well filled out; the brisket should project to a line dropped from the middle of the neck; the belly should be straight longitudinally and round laterally, and filled at the flanks; the ribs should be round, and should project horizontally and at right-angles to the back; the hooks should be wide and flat, and the rump from the tail to the hooks should also be fat and well filled; the quarter from the aitch-bone to the hock should be long: the loin-bones should be long, broad, flat, and well filled, but the space between the hooks and the short-ribs should be rather short, and well arched over with a thickness of beef between the hooks; a long hollow from the hooks to the short-ribs indicates a weak constitution and an indifferent thriver; from the loin to the shoulder-blade should be nearly of one breadth, and from thence it should taper a little to the front of the shoulder; the neck vein should be well filled forward, to complete the line from the neck to the brisket; the covering of the shoulder blade should be as full out as at the buttocks; the middle-ribs should be well filled, to complete the line from the shoulders to the buttocks along the projection of the outside of the ribs.

"These are the chief points of the form of a fattened ox. The examination by the touch follows the appearance of the eye.

"The position of the flesh on the carcass is a great consideration in judging of the ox, as the flesh on the different parts is of various qualities. The finest meat lies on the loins and on the rump, and on the fore and middle ribs; consequently the ox that carries the largest quantity of beef on these 'points' is the most valuable. Flesh of fine quality is of finer texture in the fiber than coarse flesh, and it contains more fat in the tissue between the fibers. It is this arrangement between the fat and the lean that gives the richness and delicacy to the flesh. The other parts, of various qualities, and used for soups and salting, do not fetch the high price of the parts described.

"The point or top of the rump is the first part of a feeding ox that shows the fat, and in a well-bred animal it becomes a very prominent point. Sometimes, by protruding too much when the quantity of fat is out of proportion to the lean, it misleads an inexperienced judge in the true fatness of the ox, as fat may be felt on that point, and be very deficient on the other parts which constitute a valuable frame.

"A full twist, lining the division between the hams with a thick layer of fat, a thick flank, and a full neck vein, are generally indicative of prime fattening, and also of the secretion of internal fat; but it frequently happens that these signs wholly fail, and it is observed that a fine exterior does not warrant a similar inside of the ox; and thin-made beasts, with flat ribs and large bellies, very often produce a large quantity of internal fat. The Alderny cattle furnish an example of this case. Their outward gaunt appearance seems deficient in every fattening point, and yet few animals afford so much inside fat in proportion to the quantity of carcass fat.

"The parts that are the last in being covered with flesh are the top of the shoulder and the point of the shoulder joint. When these points are felt to be well covered, the other and better parts may be considered to be in perfection, and a prime condition may be expected. But the general handling must establish the real condition, for there is a wide difference between the apparent and real fatness of an ox. The flesh may feel loose and flabby of an ox that has appeared very fat to the eye, and a truly fattened animal always feels 'hand fat.' Such handlers never

deceive the butcher, while loose fattenings never kill well.

"A judge looks at the fattened animal in the full broadside, in front, and from behind. If the examination is commenced in the middle of the body, the points of the fingers touch the whole side of the ribs from the shoulder to the hook-bone in various places, and satisfies the inquiry if the flesh be delicate and firm, and imposed in a regular manner. The right hand can be stretched to the hook-bone, examine the short-ribs, and if the bone of junction be covered with flesh, to show the fitting roundness of the formation, and if the vacancy between it and the short-ribs is well arched over with firm flesh. The flank is at the same time examined by being grasped in the hand, and felt to be bulky and firm with flesh, and at the same time mellow and pliant. A good flank should be protuberant rather than depending, in order to contribute to the cylindrical shape of the carcass by filling up the hollow that happens at the junction of the body with the thigh. A step of the body of the judge backward will enable the hand to reach the rump, or root of the tail, which is the extreme part of the body, and the first to show the condition of fat. That part must be well examined, both by touch of the fingers and grasp of the hand, and the flesh must feel delicate and soft, firm and compact. The quantity must be moderate, and not form bunches and protuberances. The same hand touches the thigh in several places down to the hock-bone, and settles the quality of the flesh of each part; the length of the rump from the hock-bone to the extremity below the tail is much attended to, and also the depth of the thigh to the point of contraction. The posterior width of the animal over the thighs is minutely observed, and the interior width, or 'twist,' and also the lining of it with fat; and if the purse be large, solid, and well furnished with a fatty secretion. A perpendicular thigh will be expected which will plumb a line; a protuberant thigh is a great deformity.

"The left hand of the judge resumes the examination on the middle-ribs, and moves forward, touching the fore-ribs in several places, and not omitting the point and top of the shoulder, and ending with the neck vein. The right hand follows behind, repeats the touches, and verifies or contradicts the conclusions of the left, and may discover places to be touched that the left had passed over. The girth is to be carefully examined, if the joining of the ribs with the shoulder be not widely discernable, or filled up beyond discovery, as it should be. The depth is to be marked, that it descend to the level of the lower part of the belly, and measure in a straight line from the fore to the hind legs. For this purpose, the flank of the fore girth must fill the cavities of junction of the body with the fore and hind quarters. The neck and brisket are examined, and must be full and fleshy, and attach the shoulder backward in a swelling junction, and slope to the head in a gentle and very graduated taper.

"If the judge approaches the animal on the posterior parts, the rump is first touched and grasped by the right hand, and the flank by the left. The right hand is then removed to the hook-bone and short-ribs, while the left hand grasps the middle-ribs, and progresses to the fore blade, the right following along the back of the animal till it meets the left on the top of the shoulder.

"In passing round the head, the neck and brisket are examined, the width of the latter being carefully remarked, and the former seen to be full and fleshy. The other side of the beast is examined by the touch of the hands, and the termination is made at the twist and purse, where the inspection began on the left side.

"The cylindrical body of an ox should approach the form of a square as near as possible, and the original structure is the chief conducement to this purpose being effected; and the full fattening fills up the cavities that may be impossible to prevent. The back is perfectly straight from the top of the shoulder, or root of the horns, to the rump or set-on of the tail, whence a line hangs plumb to the under part of the thigh, and squaring the buttock. From this point a line is straight to the lower shoulder along the flank, the end of the ribs, and the fore girth, requiring a protuberant flank, an arched swelling of the ribs and a fullness of fore girth, and a flattened shoulder, without an outward extension or irregular projection of the bones.

"A straight line levels the belly from the center of the fore legs to the position of the purse in the middle twist of the hams. The upper and lower straightness of the square are not very difficultly attained; the side-lines are the great objection, and constitute the chief deficiency of the animal frame. Not one breed of cattle that is yet seen in Britain possesses all the necessary qualities. A single property is marred by one or more deficiency, and very often a number of the latter combine to overthrow an individual pre-eminence. The Short-horn breed immeasurably excels all others in the ample development of the hind quarter. The length of the rump, width and depth of the thigh, are unequalled; and every part is excellent from the extreme posterior to the middle-ribs. From this point forward the same excellence does not prevail; the fore girth is often deficient, the shoulder is projecting sideways and the top often bare of flesh; the neck is thick and shaggy, with loose leather, and the whole fore-quarter of the animal exhibits a heavy coarseness in bones and skin which the breed may have inherited from the female progenitor in the Galloway cow. The very best breeders have not been able to banish this property from their herds. The width of the hind quarter very well extends the line of straightness along the side of the carcass; the flank is not deficient, and the curvature of the ribs is convenient; the quantity of offal makes no outward intrusion, but the fore girth often shows a cavity; the shoulder projects too far, destroys the longitudinal squareness, and approaches the form of a trapezium. In the fore quarters, both the Hereford and Devon breeds excel the Short-horns: the fore girth is more full, and the shoulder more flat, sloping very beautifully both to the ribs and neck, and is consequently better covered with flesh on every part, the very late parts included, and on the fore point and extreme top. But then all animals of these breeds lose the width behind the hook-bones, and slope to the posterior buttock, narrowing the twist and lessening the quantity of the most valuable part of the carcass. The superiority of the Short-

horn breed on this point outbalances the objectionable fore quarter; and the animal, of all beasts that are fattened, approaches nearest to the square form, and is very justly taken as a criterion, or rule of estimation and judgment.

"The eye is able to form an opinion of the exterior conformation of an animal, and when aided by the touch, a judgment may be made of the quantity and quality of the flesh and fat which are provided on the parts fattened. But the inside furniture, or the fat that is secreted among the intestines, is placed beyond the reach either of the eye or the touch, and the estimation can only be formed by analogy. The nature of the individual constitution altogether rules the disposition to provide an internal furniture; for it has been often seen and sufficiently established, that animals of all breeds that exhibit great fattening points on the exterior do not prove so well as others that want these points, and that the most seemly outsides very often afford the best inside furniture, both in quantity and quality. But it is a general assumption that a well fattened exterior will afford an inside of similar provisions, though no fixed rule can be laid down or established. A ratio somewhat inverse may be borne to each other by the outside and interior accomplishments of the fattened condition, as the fattening and milking propensities are found to diverge, as one or the other predominates. Nature seems to be unable or unwilling to support both properties in the superlative degree.

"A fattened carcass having been ascertained to be in prime condition, curiosity is incited to know if possible the dead weight of the beast while it yet lives, and to calculate the probable value from the current price of the saleable meat. Two mechanical methods have been adopted to attain this object—by weighing the animal, making allowance for the offal, and by measurement. Though mathematical exactness never can attend either of these methods, yet with due estimation of the influential circumstances, a means of assistance is afforded of arriving at the carcass weight, and consequently at the value of the animal, with sufficient accuracy for practical purposes. The most approved conclusion states the live and dead weight to be as 9 to 5, or multiply the live weight by the decimal .605, and the result is the weight of the four quarters. The allowance for offal is very largely and variedly influenced by the breed of the animal, sex, age, and accidental circumstances. The above rule forms an average, and the annexed table exhibits the medium of offals in fat cattle:

	In general.	In rare cases.
Hide and horns,	56 to 98 lbs.	112 to 126 lbs.
Tallow,	42 to 140 lbs.	nearly to 280 lbs.
Head and tongue,	28 to 49 lbs.	
Kidneys,	2 to 4 lbs.	
Black collop,	2 to 4 lbs.	
Heart,	6 to 9 lbs.	
Liver, lungs, and windpipe,	21 to 28 lbs.	
Stomach and entrails,	140 to 196 lbs.	
Blood,	42 to 56 lbs.	

"The animals of Britain may be classed in three divisions—Short-horn, Hereford, Sussex, and Devon; Long-horn, Galloway, Northern Scotch, Suffolk, and Welch; West Highland cattle, Shetland and Orkney Islands. The per centage of beef to live weight may be thus given:

	Per cent. of beef in live weight.		
	Class 1.	Class 2.	Class 3.
Half fat,	55 to 59	50 to 65	48 to 50
Moderately fat,	60 to 62	56 to 60	51 to 55
Prime to very fat,	63 to 66	61 to 63	56 to 60
Extraordinarily fat,	67 to 70	64 to 66	61 to 66

"These figures apply to the ordinary fattened animals, in heifers and oxen.

"The most opproved formula of ascertaining the weight by measurement, multiplies the square of the girth by the length, and that product by the decimals .24 or .25, for the weight of the four quarters in imperial stones. [Assuming the carcass to be a true cylinder, the area is found by multiplying the length by a sectional part of the figure, and here is the square of the girth multiplied by .07958 (the area of a circle whose circumference is unity) for the area of section, which multiplied by the length, gives the solid contents of the cylinder. The difficulty remains in giving a certain weight to any given quantity of the cylinder. It has been assumed, prooably from experiment, that every cubic foot of the cylinder will weigh about 3 imperial stones. Now, .07958 multiplied by 3, gives .238 or .24 as being more convenient for practice. Experiment has had a very large share in fixing such rules for practice.

"The following table of multipliers has been carefully compiled:

Condition.	First Class.	Second Class	Third Class.
Fair beef,	.23	.22	.22
Moderately fat,	.24	.23	.23
Prime fat,	.25	.24	.24
Very fat,	.26	.25	.24
Extraordinarily fat,	.27	.26	.25

"The decimals .26 and .25 may apply to the beasts of the Christmas exhibition in London.] *

"The live weighing is quite preferable to the measuring process, in ascertaining the weight gained in any certain time. The tape line can be used at any time when the weighing machine is beyond reach, and for computing the quantity of beef, is preferable to the weighing alive, though it is unable to determine the fattening that is gained within certain periods of time.

"Arbitrary assumption must not be allowed to have produced the rules that have been now given for judging live stock; they constitute the natural means that exist to enable some satisfactory conclusions on the subjects that have been treated. Much observation and practice are required in order to understand and apply the means of judging the different circumstances of the animal existence. All persons can not perceive the tendency of these rules to lead to a correct judgment; long and careful observation being requisite to convince the mind of their value in that

* In the above paragraph the stone weight is used. A stone is equal to 14 pounds. The above rule may be stated more simply, as follows: Multiply the girth (in feet) by itself, and multiply the product by the length. The number thus obtained, if multiplied by 3½, will give the weight of the carcass in pounds.

respect. Tuition can not do it, without practical experience; the study of nature has furnished these rules for guidance, and as the laws of nature are general, these rules must be of universal application. The acquirement is generally sought of judging accurately of the quality and weight of live stock; every farmer is desirous to possess it, and every pupil in agriculture mostly appreciates it in the most enticing form. No breeder of animals can possess a higher accomplishment, and the highest perfection of breeding is maintained by it. An extensive experience is essential to its acquirement; and even with that enjoyment, some persons never become good judges. An acute observation must cull from the lessons of experience, and with much judgment and discrimination. These natural faculties are not gifted away with profusion, nor are the requisite trouble and perseverance bestowed to supply the wants. Most persons must be judges intuitively or not at all; hence the many expedients that have been adopted to acquire the knowledge and experience, the many tables from measurement, and rules from live weight. Good judges very rightly contemn these rules and tables, as they can ascertain the real weight of marketable flesh on any animal much more nearly by the eye than by any superficial rule, and the true quality of it by the touch—a property which these tables can in no way convey. No surprise need be raised by the comparative superiority of the senses for this purpose, the depreciating and enhancing points of the carcass can not be determined by artificial rules, and the tape and the steel-yard can not be substituted for the eye and the hand. If the bodies were true cylinders, and if the offals always bore a definite and invariable ratio to the four quarters of flesh, then the measurement might tell accurately; but the various proportions that exist require the judgment to compare the value of the several disproportionate parts. It is nevertheless true, that the primest condition of animals, which approach the nearest to the mathematical, are approximated by rules, which are still inferior to a practically matured judgment. The rules, however excellent, require a correct application; the girth and length are to be nicely taken, as one inch will blunder more than the eye of the judge. The live weight depends on the fulness or emptiness of the carcass with food; and neither weighing nor measurement give any idea of the quality of the flesh, which rests on the eye and the hand to judge in this most essential particular."

DRYING POTATOES FOR SEED.

A. N. C. Bollman, Counsellor of State and Professor in the Russian Agricultural Institution at Gorigoretsky, says that "thoroughly dried potatoes will *always* produce a crop free from disease." In an interesting pamphlet, it is asserted as an unquestionable fact, that mere drying, if conducted at a sufficiently high temperature, and continued long enough, is a complete antidote to the malady.

The account given by Professor Bollman of the accident which led to this discovery is as follows: He had contrived a potato-setter, which had the bad quality of destroying any sprouts that might be on the sets, and even of tearing away the rind. To harden the potatoes, so as to protect them against this accident, he resolved to dry them. In the spring of 1850, he placed a lot in a very hot room, and at the end of three weeks they were dry enough to plant. The potatoes came up well, and produced as good a crop as that of the neighboring farmers, with this difference only, that they had no disease, and the crop was therefore, upon the whole, more abundant. Professor Bollman tells us that he regarded this as a mere accident; he, however, again dried his seed potatoes in 1851, and again his crop was abundant and free from disease, while everywhere on the surrounding land they were much affected. This was too remarkable a circumstance not to excite attention, and in 1852 a third trial took place. All Mr. Bollman's own stock of potatoes being exhausted, he was obliged to purchase his seed, which bore unmistakeable marks of having formed part of a crop that had been severely diseased; some, in fact, were quite rotten. After keeping them for about a month in a hot room, as before, he cut the largest potatoes into quarters, and the smaller into halves, and left them to dry for another week. Accidentally the drying was carried so far that apprehensions were entertained of a very bad crop, if any. Contrary to expectation, however, the sets pushed promptly, and grew so fast that excellent young potatoes were dug three weeks earlier than usual. Eventually nine times the quantity planted was produced, and, although the neighboring fields were attacked, no trace of disease could be found on either the herbage or the potatoes themselves.

This singular result, obtained in three successive years, led to inquiry as to whether any similar cases were on record. In the course of the investigation two other facts were elicited. It was discovered that Mr. Losovsky (living in the government of Witebsk, in the district of Sebège), had for four years adopted the plan of drying his seed potatoes, and that during that time there had been no disease on his estate. It was again an accident which led to the practice of this gentlemen. Five years ago, while his potatoes were digging, he put one in his pocket, and on returning home threw it on his stove *(poële)*, where it remained forgotten till the spring. Having then chanced to observe it, he had the curiosity to plant it, all dried up as it was, and obtained an abundant healthy crop; since that time the practice of drying has been continued, and always with great success. Professor Bollman remarks that it is usual in Russia, in many places, to smoke-dry flax, wheat and rye; and in the west of Russia, experienced proprietors prefer for seed onions that have been kept over the winter in cottages without a chimney; such onions are called *dymka*, which may be interpreted smoke-dried.

The second fact is this: Mr. Wasileffsky, a gentleman residing in the government of Mohileff, is in the habit of keeping potatoes all the year round by storing them in the place where his hams are smoked. It happened that in the spring of 1852 his seed potatoes, kept in the usual manner, were insufficient, and he made up the requisite quantity with some of those which had been for a month in the smoking place. These potatoes produced a capital crop, very little diseased, while at the same time the crop from the sets which were not smoke-dried was extensively

attacked by disease. Professor BOLLMAN is of opinion that there would have been no disease at all, if the sets had been better dried.

The temperature required to produce the desired result is not very clearly made out. Mr. BOLLMAN's room in which his first potatoes were dried was heated to about 72°, and much higher. By way of experiment he placed others in the chamber of the stove itself, where the thermometer stood at 136°, and more. He also ascertained that the vitality of the potato is not affected, even if the rind is charred.

In connection with this subject, we would remark that we have several articles of general interest, translated expressly for the *Genesee Farmer*, from the Journal of the Royal Agronomical Society of St. Petersburgh, which we receive through the kindness of the Russian Minister, M. BODISCO, at Washington. Our arrangements are complete for obtaining every thing of value to our readers in agriculture and horticulture that transpires in Prussia, Austria, Italy, France, and Great Britain.

AN AGRICULTURAL IMPLEMENT ASSOCIATION.

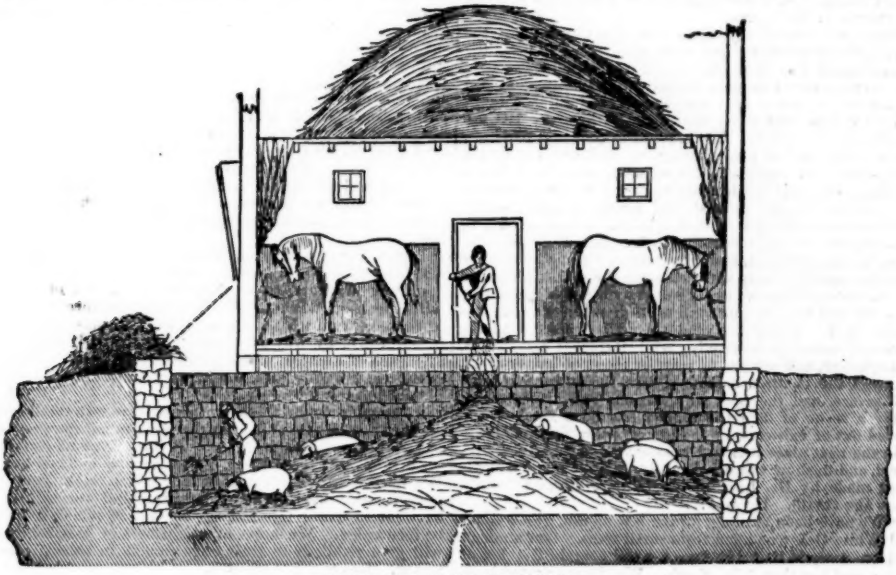
COL. CARTWRIGHT, of Northampton, England, has started a plan for supplying that county with the most improved implements of tillage, husbandry, and agricultural machines of every description needed, which is worthy of consideration in this country. His proposal was to form a company for hiring out improved agricultural implements throughout the county. To affect this, there must be depots all over the county, depending upon money raised by the company. The capital to be possessed by the company, to be useful, must not be less that £12,000, which would be best raised, as he had been advised, in 600 shares of £20 each. As to the arrangement, he put £1000 for each depot. Now, at each depot they must have two threshing machines, costing £400. They must also have machines, which, from the improvements made and making, he believed would yet be found to act profitably—*i. e.*, reaping machines. Ten of them would be necessary at each depot, and he put them at a cost of £200. There would then be £400 left for providing drills and other machinery necessary for the neighborhood. Now, then, let them see what they would get for the £1000; in other words, how the company would stand as a commercial speculation. A threshing machine would cost £200. [We suppose that this means threshing machine and portable steam engine.] It ought to be in use 100 days in the year; at 9d. per quarter it would bring in, supposing it threshed 40 quarters a day, 30s. per day, or £150 in the year. He should take it, however, at only 50 per cent., which he believed might be safely calculated upon for all the machinery. A reaping machine, including the latest improvements, would cost £25. Supposing it to be used 20 days only, it was calculated to pay more than 50 per cent. It would cut 8 acres a day, which, at 2s. an acre, would in 20 days produce £16 for the £25 laid out. And so they would find it with the drills and all the other implements. Well, then, taking 50 per cent. as the maximum, there would be an annual return of £500 at each depot. Then came the question, what were they to do with it? He had roughly calculated that they must appropriate £50 for their storehouse, £100 for their engineer and two laborers (exclusive of the money paid to them when employed out), a dividend of 5 per cent. to shareholders would be £50 more, making £200; which would leave them £100 at each depot to work the company. Another point was, that these things would not only be let out to hire, but that occupiers would have the opportunity of buying implements of the company at a reduced price, after they had seen their efficient working, as the discount allowed by the makers would be divided between the company and the retail purchasers. Then came the question of stations. Northampton, he had thought, should be a double station—a kind of central depot, to which £2000 should be appropriated. The remaining stations, at each of which £1000 should be invested, he proposed to make at Wellingborough, Thrapston, Oundle, Weston-by-Weedon, Kettering, Towcester, Daventry, Guilsborough (or Hazlebeech), Old Stratford, and Brackley; thus they would be enabled to throw over the whole county a large number of implements. He had heard it objected that such a company would fail, because every one would want the same implement on the same day. The answer to that was, that when an applicant desired to have an implement, he could be supplied if the implement were at the time disengaged, or he could have it in his turn. But, even should he not obtain the implement when he wanted it, its employment elsewhere would have the effect of easing the market, so that he might obtain labor to harvest his corn before it was shed. This, then, was the scheme, though imperfectly sketched; and the Colonel proceeded to say that, through having interested himself in this business, he had received various communications from talented and practical people. He was perfectly satisfied that the principle of establishing a company was right, and he wanted to know who else held the same opinion. He would not ask them to decide that day. They had now, however, heard his statement, and he had caused circulars to be prepared, directed to himself, which would be distributed at the close of the meeting; and if a sufficient number of them were returned to him taking a favorable view of the question, he should have the greatest pleasure in calling another meeting to carry out the project. He believed that all the budgets of all the Chancellors put together would not help the farmers half so much as good machinery.

UNFERMENTED BREAD.—A patent has recently been granted in England for a compound mixture designed to render bread light, without the trouble and loss that attend the raising of bread by yeast, or "salt-risings." The following are the ingredients used by the patentee: Tartaric acid, 120 parts, by weight; bicarbonate of potash (saleratus), 144 parts; loaf sugar, pounded, 30 parts; rice, ground fine, 116 parts; and East India arrow-root, 30 parts. The above is a good preparation, but the other ingredients than the tartaric acid and bicarbonate of potash, or soda, may be dispensed with. Mix the acid with the flour, and the saleratus or supercarbonate of soda with the wetting, for making bread.

PLAN FOR MAKING A MANURE CELLAR.

Winter, with its storms and snows, necessarily brings to the farmer a season of comparative relaxation from his hardest toil. His crops being all garnered and secured, the ground frozen against his plow, and his most active labors almost brought to a stand still, by causes far beyond his control, he is in a measure compelled into leisure hours.

During the past summer his manure heap has been exposed to the wasting effects of the rain and sun, until little of its goodness remains; and all his fertilizing stock, which is to accumulate so rapidly during the winter, will, unless something is done to prevent, be in the same valueless condition when spring, with its genial influences, comes around. It is for the farmer to examine in his leisure hours, that we have engraved the accompanying sketch. It illustrates a very simple mode whereby a manure cellar may be constructed beneath any barn, the whole expense, probably, not exceeding the loss which falls to the farmer in one winter, by the practice of exposing his manure heap in the open barn yard.* Our engraving shows an elevation of a barn, beneath which a cellar has lately been excavated.



PLAN OF A MANURE CELLAR.

The barn stands on a dead level. There was no accommodating hill which required but the throwing out of the earth on one side to form a convenient cellar. Like too many a farmer's out buildings, it had evidently been erected without the least thought of convenience or economy of location.

It will be noticed that on the left side the cellar projects out beyond the building. At this end a temporary shed was erected to carry off the rains, and here the undermining operations were commenced. During the leisure rainy days of fall, before the ground had frozen, a pit was dug to the depth of ten feet, and a substantial but rough wall was built up, forming one of the four sides of the cellar. After this, operations were extended beneath the floor, and the digging soon passed the reach of frost. Here in the stormiest days, when it was a pleasure than otherwise to work, the excavation and walling up were carried on until, in a short time, the cellar was completed and ready for use. Temporary stancheons were used to support the barn during the process of excavation, until the walls were done. The pigs were then turned down, and by their continual rootings and turnings of the manure, which fell through a trap in the floor, the whole mass was by spring in an excellent condition. This plan saved all the urine, as well as solid matters, so that its value, compared with exposed manure, was as ten to one. Doors were hung on the side of the barn where the cellar projected, which, when closed, prevent the rain from entering. When open, ample space is afforded to throw out the manure, as seen in the sketch. The dotted lines show the position of the doors when closed.

This sketch is not presented as a model, to be followed in building a barn. It is merely to exhibit the manner in which a cellar was made, in one particular instance, the barn being already built; and it may be useful to hundreds of others who could adopt something of the kind to great advantage.—*People's Journal.*

* The present annual loss to American farmers, by the practice of exposing their manures to the action of the weather, is estimated at twenty millions of dollars.

Great Yield.—A correspondent of the *New Haven Palladium*, at Roxbury, Litchfield county, says that Dr. A. W. Fenn, of that town, has raised this season from one kernal of corn, sixteen ears, the product from which was 4209 kernals.

BURNING GREEN WOOD.

We have in earlier volumes of this journal so often called public attention to the losses incurred by burning green firewood, that, did we not know the value of repetitions to many new subscribers, the subject might be considered as exhausted. The following remarks of the *New England Farmer* present the matter in a new light, as disturbing the good temper and harmony of the family circle, and therefore worthy of consideration:

It is to be hoped that there are not many New England farmers who are in the practice of using green wood for their cooking stoves, or for warming their rooms. The wood-house is generally as important an appendage to a New England home as a barn, and is usually filled with seasoned wood sufficient for a year's supply. But there are some, we observe, who still use wood in its green state for fuel, hauling a load now and then, when the demand becomes imperative, and chopping just enough to appease the clamor in the kitchen.

There are several objections to such a course; just the *moral effect* is decidedly bad, as it is a requisition upon the women much like that imposed on the Israelites of old; they were required to make bricks without straw, and you require the women to cook and warm the children without fuel, or at least with wood that contains in every 100 lbs. 35½ lbs. of *cold water*. Now it requires time and patience, and a great stock of good humor, to puff and encourage into steam and vapor 35½ lbs. of cold water, in a frosty morning, when the children are to be got to school in season, and the men are to be started for the woods. If this trial occurred only once a week, it might be supported with some degree of complacency; but it comes every day, and many times in the day, and often when care and over-labor have fatigued the body and weakened the will. The mind is thus brought into an easily excited state, and gives way to words and actions unnatural to itself when not thus unjustly tried. Green firewood should be rejected as the demon of discord in the family; while it smokes, and steams, and sputters, and refuses to toast or roast, or bake or boil, it makes the children sulky and tart, the husband gloomy and severe, and the poor wife anxious and disheartened. Many a scene of domestic felicity has been smoked and sizzled out of existence by the use of *green firewood!*

In the next place it is bad *economy* to burn green firewood, and to show this conclusively, we give below a statement made by Dr. Lee, in the *Genesee Farmer*, several years ago (1846). He says:

"We have been burning, for the last month, green Black and White Oak wood, cut from small trees. Our students find on analysis that 100 lbs. of wood contain 35½ lbs. of water, and less than 1 lb. of ash. We demonstrated in an article published in the last *Farmer*, that 1000 degrees of heat are taken up in converting water into steam, which occupies a space 1696 times larger than that filled by water. Although the quantity of latent heat contained in a cord of green wood is not increased by seasoning, and hence the latter can evolve no more sensible heat than the former; still, in burning green wood, or wet wood, it is almost impossible to avoid the loss of one-fourth of the heat generated, in combination with water, in *steam* and *vapor*. Most of the heat rendered latent in these gaseous bodies passes up chimney, where they are condensed, and give out their heat to warm all out doors.

"We are anxious to give the most unscientific reader a clear idea of this subject, for it is really one of great practical importance. Look at it then, in this light: You have divided your 100 lbs. of green Oak, Beech or Maple wood into 65 lbs. of dry combustible matter, and 35 lbs. of cold water. Every pound of this water you evaporate in green wood, and *throw the heat away* by the consumption of a part of your 65 lbs. of fuel, and then take the heat evolved by the balance of your fuel to warm your room. How many ounces of perfectly dry wood are required to transform a pound of water into steam, we can not at this moment say; nor can we determine what portion of the heat taken up by steam in the combustion of green wood is again evolved by condensing in the room where the fire is made. We believe, however, that the usual loss is about equal to one-third of all the heat contained in 65 lbs. of kiln-dried wood; and that the gain in seasoning wood under cover is at least 25 per cent."

Wheat-Culture in Massachusetts. — We are pleased to see the farmers of the old Bay State turning their attention to the culture of wheat. At the last United States census their entire crop was less than half the product of single towns in Western New York. That the production of this important staple may be advantageously practiced by the agriculturists of Massachusetts, the following letter, written to the editor of the *New England Farmer*, abundantly proves:

Friend Brown:—The question has been asked, "Why do not the farmers of New England raise their own wheat?" We answer, because they do not try. We believe that the farmers of New England can raise their own wheat as well as their corn, rye and potatoes. We are not disposed to tax the readers of the *Farmer* with a long fine spun theory, and ground our belief and assertion upon that, but simply to state a few plain facts comprising our own experience and that of some of our neighbors in raising wheat the past season. The 10th of 9th month, 1852, we sowed two bushels of White Flint wheat on two acres of warm, loamy land, from which a crop of grass had been cut. We gave it a common dressing of stable and compost manure before plowing, and sowed on the furrows. About the middle of 7th month we harvested the crop, which yielded 65 bushels, or 32½ bushels to the acre, weighing 63 lbs. to the bushel.

James Comstock, of our town, harvested the past summer from 1½ acres, 51 bushels, or 34 bushels to the acre.

Henry Wheelock, of Mendon, purchased of us last fall 3 pecks of wheat, which he sowed on three-quarters of an acre, from which he obtained 23 bushels. Another, in our town, by way of experiment, sowed ¾ quarts on an eighth of an acre, which yielded 4½ bushels. Another, in Sutton, from 2 quarts, sowed on a sixteenth of an acre, obtained nearly 2 bushels.

Although some of these experiments are on a small scale, yet they are all attended with the same satisfactory results, and go to prove that the farmers of New England can raise good crops of *winter wheat*, if they can be induced to try. We have sowed 4 acres this fall, which look finely at present; the result next year. Several of our neighbors have sowed wheat this fall, an account of which will also be forwarded. We hope other farmers of Massachusetts will give publicity to their experiments in raising winter wheat. Battey & Aldrich.

Mr. Editor:—Your correspondent on page 371 of the last volume of the *Farmer*, over the signature of "S. W.," asserts: "It is susceptible of proof, that the cooked slop of the distillery will fatten as many animals as the new corn would have done before it was ground and passed through the still." The fact is not readily credited by the farmers in this section, and will not be, unless accompanied by comparative statements, and figures, showing the precise quantity of nutriment in the grain, and the quantity of animal flesh it will produce if fed in the raw state, or in meal properly prepared, with the same quantity of grain after it has "passed through the still." And while he is making out his statements, he will confer a favor on some farmers by giving an analysis of corn and rye, and showing the parts that pass by distillation into alcohol. I expect your correspondent will, through the *Farmer*, clear up this matter, and not leave it in the dark.—M. W.—*Somers, Conn.*

FLAX CULTURE.

I NOTICED an article in the December number of the *Farmer*, from Mr. R. T. BROWN, of Indiana, on the Cultivation of Flax, by the Hon. H. L. ELLSWORTH. His calculations are altogether too high. I visited Ireland last summer for the express purpose of knowing how they manage their flax after it is pulled. I have three brothers in the North of Ireland, all extensive flax-growers, who have been in that business for many years. I remained there from the time flax was in blossom until it was scutched. I was also in a number of the most extensive linen factories. I found but one opinion among the manufacturers, which was that any chemical process for separating shove from the lint, that had yet been tried, was very injurious to the lint. The whole process adopted there can be used here, with one exception only, and that is pulling, which is the most costly part of the labor. For that, I intend to cut with a reaping machine, having the ground well rolled when the seed is sown, making a smooth surface. The machine will cut within two and a half inches of the surface. In Ireland, three-fourths of all the lint is dressed by steam power. The shove is quite sufficient for fuel for the engine, and a boy can attend it; it performs the breaking and scutching very perfectly. Flax can be steeped, spread upon the grass a few days, and gathered and bound in bundles and taken to the flax mill, at as little cost as any other way, and perhaps less. The manufacturer cuts all the lint before carding, from three to five inches in length; it is then roped and spun, the same as cotton. I bought some yarn spun in one of these factories so fine as to have twenty-two dozen in one pound, spun by machinery. If you wish, I will send you a little flax, which will pay to export when dressed. It is worth $2.50 per stone of 16 lbs.—the break and sutch, 21 cents per stone. It is not dried before breaking. I sowed a little of the white flax seed last year; it grows about eight inches taller than the brown seed, and I think will be adopted by those who intend saving the lint. HUGH MCELROY.—*Sidney, Shelby county, Ohio.*

[We thank Mr. MCELROY for his instructive letter, and should be pleased to receive a specimen of the flax which he says he will send to the editor. If this important plant can be profitably grown in this country for its lint as well as seed, it will give another staple to American agriculture.]

POULTRY ECONOMY.

MR. EDITOR:—The excitement and rage about poultry have no precedent; and the fabulous price paid for imported breeds speaks well for their quality, if the cost of a thing is evidence of value. Of the imported kinds I know nothing from experience; but in keeping the Domenigues I am well acquainted, my stock ranging from twenty to forty. I give them what they require to eat the year round, principally corn. The consequence is, there has not been a day in two years which has not given me new-laid eggs. In the summer of 1852 my fowls were cooped up five months; in 1853, for three months. In the December number of the *Genesee Farmer*, 1851, there is an article credited to the *Agricultural Gazette*, stating that poultry kept in coops beyond fourteen days, will grow leaner, and ultimately die. Now I have no doubt they would die, if fed on grain and water only. They require more than this, and obtain more when at large. Forty fowls will eat one bushel of weeds or grass in twenty-four hours, when placed within their reach in the coops. The want of this green feed may be the cause of their dying; at least, my poultry did not want it, and they did well. Can this be a secret to poultry-raisers? It must have been so to the *Agricultural Gazette*, if not to others. It may have been thought of too little importance to notice. I can not regard it thus lightly, since it may affect the poor more than the rich. The poultry kept by the poor is often an objection to their occupying a tenement near by a field designed for raising grain. Poultry kept in coops avoids this objection. I would not recommend keeping fowls in coops as a matter of economy, but for convenience. They will pay in coops with proper feeding. All must know that they require lime in some shape. I give mine shells broken to a proper size, the year round. Poultry will not pay without enough to eat; and as a matter of economy, I would suggest that their food be placed in a situation accessable to them at all times. Thus treated, the return for the investment is as sure as any other. My coop is four feet by six, and three and a half high, with the ground for a floor. The sides and ends are open and airy, with poles across the top. In the coop they show no desire to incubate. My chickens do not have the gapes. ALEXANDER TITUS.—*York Town.*

SHEEP AND CATTLE IN SCOTLAND.—Extract from a letter I received a few weeks ago from a Mr. MEIKLE, a farmer in one of the Border Counties of Scotland:

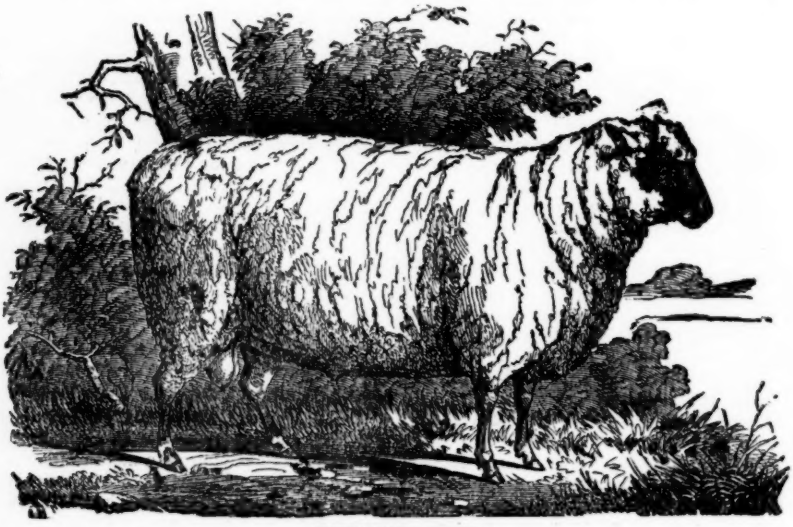
"I had 290 ewes, and from these 507 lambs; 310 of the top lambs were sold at D. BOSWELL'S fair, and the second ones at Melrose a month afterward. Our average number of twins from 100 ewes is from 70 to 75 pairs. As to the wool, a hog's (that is, a yearling sheep) fleece, weighs from 6 to 8 lbs., and the ewes' rather lighter. Prices this year are, for hogs' wool 1s. 6d., and for ewes' 1s. 4d. per lb.

"With respect to cattle, it is of great importance to have a proper breed. Ours is the Short-horn. Calves get milk three or four months; and after they are a month old, we add a little hay, cut turnips, or oil cake, which they very soon learn to eat; of course we put them on grass as soon as it is ready. It is very necessary to keep them always advancing in condition. The first winter we give them turnips and straw, or hay; graze them well the following summer; and next winter feed them off on turnips. We have different kinds of turnips; the first two months we give them Globe or common turnips; next two months, Yellow or Green-top; and then finish off with Swedish, along with a little oil cake or bruised corn (grain). Many have this year realized from £18 to £20 ($90 to $100) a head for two-year-olds; but prices this year have been unusually high. Our average price for two-year-olds is from £14 to £16 a head (that is, from $70 to $80)."

Mr. MEIKLE does not mention the price at which he sold his lambs; but I see it stated in a newspaper that he obtained for them £1 4s. a head, which is equal to $5.75. Neither does he state the number of cattle that he fattened. If, however, the proportion of cattle to sheep is kept up that was observed when I left Scotland, the number would be about 35. His sales, therefore, would be as follows:

507 lambs, at $5.75,	$2,915.25
290 fleeces of wool, at $2,	580.00
Produce of 290 ewes for one year,	$3,495.25
35 two-year-old cattle, at $85,	2,975.00
Produce of cattle and sheep for one year,	6,470.25

The above is not an isolated instance of extreme fecundity of sheep, but one that may be considered a fair representation of what occurs in every flock of Blakewell ewes, that is judiciously managed.



SOUTH DOWN SHEEP

The same result might be obtained in this country with the same breed, and with the exercise of the same management and care.

The early fitness of the cattle for the shambles is the effect of good keeping, joined with a strong tendency in the breed (Durham) to early maturity.

I may, as a contrast to these sales, give the sums that a farmer in Montgomery county (Md.) would realize for the same quantity of stock of the same ages, but of the breed now existing in that county:

From 290 ewes 270 lambs might be raised, which, at $3 a head, would amount to	$810.00
290 fleeces of wool, at $1.62½,	471.24
35 two-year-old cattle, at $25,	875.00
	$2,156.25
Amount of Mr. Meikle's sales,	6,470.25
Difference,	$4,314.00

The difference of actual profit would not be far short of that amount, for the expense of keeping the sheep through the winter is about the same in both countries; and as to the expenditure upon the cattle in Scotland, it is not much more than that incurred upon the cattle of this country. The former, from the time they are calved to the time they are sent to the butcher, which embraces a period of two years, do not consume more than an acre and a quarter of turnips each, while the latter would, for the same period, to be worth $25 a head at the termination of it, require an acre of corn, estimating the produce at 35 bushels.

The contrast cannot be ascribed to a difference in the price of meat, for that is nearly the same in both places; nor can it be imputed to the soil of Scotland being better, nor the climate more propitious for raising and fattening stock, for in none of these respects is Montgomery county inferior to that country. It must be chiefly owing to a want of a proper breed, which Mr. MEIKLE says it is of great importance to possess; and in so far as the cattle are concerned, to a want of turnips, a root which Mr. CHARLES B. CALVERT has clearly demonstrated can be cultivated as successfully in Maryland as in Great Britain.—*J. Bell, in the American Farmer.*

SOUTH DOWN SHEEP.

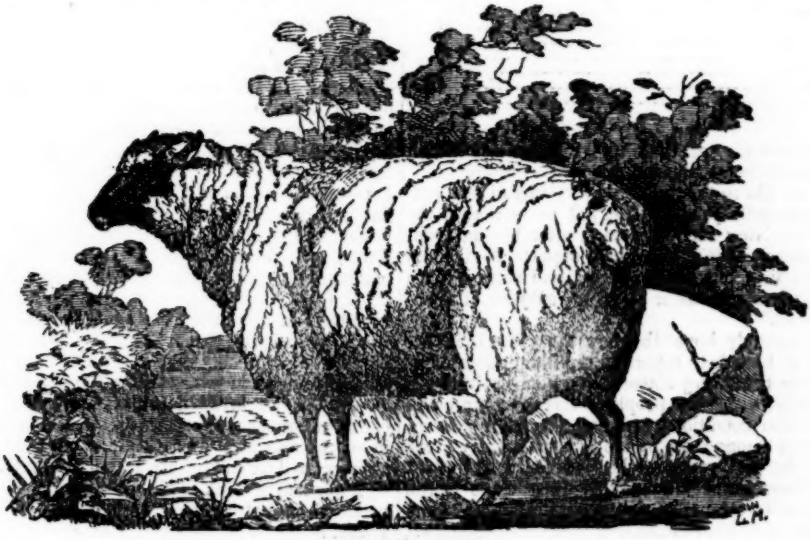
THE South Down breed is derived from the chalky hills of Sussex on the British Channel. It is to be classed amongst the Down and Forest breeds, but it has been made to surpass them all by the effects of breeding and careful culture. It has been widely spread over all the south-eastern counties of England, and has passed into districts beyond the countries of the Chalk, taking the place of the preëxisting breeds of the downs and commons. The sheep of this breed are destitute of horns, have dark colored faces and limbs, and produce a short felting wool fitted for pre-

paration by the card. Their size varies with the locality, and the taste and opinions of the breeders; but they are of greater weight and bear heavier fleeces than the older sheep of the Sussex Downs. They are adapted to a lower range of pastures than the Black-faced sheep and Cheviot breeds, and are better fitted for a dry and temperate climate than for a cold and moist one.

For mutton, and wool for home consumption, we regard the South Downs as about the best breed of sheep a farmer can keep; and this is becoming the opinion of all, or nearly all, who have tried them in the Middle and Southern States. They yield weighty fleeces of fair wool, adapted to the manufacture of every-day cloth for laboring men, and the article so largely consumed in the planting States, in the form of blankets for both sexes of their negroes. We know several small flocks of South Downs at the South; and while their flesh is all that can be desired in the way of lamb and mutton, and the ewes are the best of nurses, the return in wool is most satisfactory. Where one desires to keep large flocks of sheep for their wool, as a staple to be sent to market, the Merino is perhaps better than any other variety, for general breeding and use. Some, however, find the Saxons more profitable, if we are to credit their statements in the matter.

Sheep husbandry and wool growing are sadly neglected in this country, and mainly because the people think more of the luxury of keeping worthless dogs, than of the benefits and advantages of sheep. Thousands would embark in the breeding of these valuable animals at the South and West, where sheep walks abound, if legislatures would only enact laws that should effectually indemnify their owners from all losss by the depredations of vicious dogs. A tax ought to be imposed on the canine species in every State and Territory, just sufficient to cover all losses that accrue to the owners of sheep from the attacks of dogs, in all cases where the keeper of the offending dog or dogs is not known, or is unable to respond in damages. In this way, dogs, as a whole, are made to guarantee the good behavior of all their race. If they kill no sheep, no tax is assessed upon them; but if they do destroy this kind of property, let the loss fall not on the owner of the sheep *alone*, but on all the owners of dogs in the county or State.

So far as our observations have extended, South Downs are distinguished for their quiet habits, docility, and disposition to keep in good condition on a moderate allowance of food. Perhaps these commendable qualities constitute their strongest claims to popular favor. Be that as it may, were we about to breed sheep to sell (as we should do, were it not for the vast number of dogs that infest the District of Columbia), the South Downs would be our choice over all others, for Maryland and Virginia markets. They are not so large as the Leicester or New Oxfordshire sheep, some of which, kept in Virginia, have weighed 400 pounds; but they are large enough for all useful purposes. No better mutton can be found in the world than that brought to Washington and Baltimore markets, from the mountain ranges which divide the waters that fall into the Ohio river from such as flow into the Atlantic. The wild herbage of that elevated region imparts to the flesh of sheep a flavor not unlike that of the best venison; while the liberal amount of travel and rambling about of small flocks, develops a great deal of muscle as compared with the quantity of fat. Sheep overladen with tallow, may do for fat-eating Englishmen and would-be Aldermen, but they are not adapted to plain, unsophisticated tastes. To produce first rate mutton, sheep need a reasonable amount of exercise in the open air, and a considerable variety of food. Beside grass and legumes, they eat the leaves of



SOUTH DOWN SHEEP.

briars, evergreens (those of the laurel will kill them), and of more than a hundred different plants, if within their reach.

REPORT OF THE TRANSACTIONS AT THE VETERINARY SCHOOL OF ALFORT.

During the last sessional year, students at this valuable institution have had rare opportunities for acquiring a knowledge of various branches, in veterinary science; from their annual report, we learn that the number of animals admitted for treatment, and returnable defects, or as subjects of surgical and therapeutic experiment, are as follows:

Of the horse tribe	1041
Of the bovine tribe	22
Of smaller species	383
	1446

Animals submitted to consultation were,—

Horses	6510
Cows	33
Asses and mules	80
Dogs	397
Goats	17
Cats	4
Pigs	3
	7044

Making in the aggregate 8490 animals over which the students have extended their observations.

"If we add to this the number returned the previous scholastic year, 7994, it will be seen that the pupils receiving their diplomas, after having spent two years at school, have had opportunities of instruction in veterinary medicines and surgery from the considerable number of 16,484 subjects of different species."

We sincerely hope that ere the year 1853 has passed, to be able to report on the transactions of an *American veterinary school!* Such an institution is surely needed; for the people of this country are now in the same condition regarding veterinary matters, as existed among those of the mother country previous to the endowment of her veterinary university. And if ever we should be visited by those fearful epidemics, or epizoötics, that have to such an alarming extent prevailed throughout the British dominions, the pestilential sword will be no less keen, nor destructive here, than it was in the former country. But we have enough at the *present* time to arouse our agriculturists from their long slumber of indifference to united action for the advancement of a science which has, and is still calculated to sow broadcast the germs of usefulness. It is well known that there are constantly occurring among various descriptions of live stock, thousands of premature deaths, and a like number of unnecessary cases of disease, every year, which might be prevented by the aid of veterinary science. Many of our farmers have, to their sorrow and mortification, discovered that the offspring of many fine and costly animals rapidly degenerate, and they know not the why nor the wherefore. Then, again, observe the countless number of malformed, and otherwise defective horses that are to be met with in all parts of the Union; inheriting through ancestral descent a broken down constitution, a weak, porous, bony structure, which sends out its morbid growths, in the form of spavin, ringbone, splent and other osseous deformities, to the utter ruin of the subject's reputation, and his owner's anticipations.

Does the farmer seek a remedy? If so, he should read the *Book of Nature*, as it is written by Omnipotence on the face of universal creation, and recognize there through the intelligence of man, in germination, growth and maturity of both animate and inanimate matter. Let the farmer who is thirsting for knowledge, knock at the door of veterinary science, and it shall be opened unto him, and he shall there learn by what means races of animals degenerate. It has been discovered, and the same is true of brutes, that malformation, decrepitude and premature death result from disregarding the immutable laws of nature. Ask the surgeon how and by what means the sons of Adam deteriorate, and he will tell you they *have violated* God's uncompromising laws, as they apply to our mental and physical natures. Do you desire proof of this? If so, you are referred to the Nobles of Spain and Portugal—to the lunatics of this and other countries, and to the countless hosts of weak, puny, living—yet half dead—of all nations, that are to be met with—the architects of their own infirmities. If other and more convincing proof be needed, we have only to contrast the stalwart frame and iron constitution of our departed ancestors with the present exotic and diminutive race, and the difference appears almost as great as that now existing between the *lion* and the *lamb*. Hence there is a fine field for American talent and industry, in that branch of veterinary science known as comparative physiology. Finally, if it were not for the enterprise manifested by our wealthy agriculturists, in importing stock from abroad, and thus mingling *good blood* with the common herd, the live stock of this country would be little else than walking skeletons, fit subjects only for some friendly epizoötic. Let a small portion of the money, now expended for the purchase of foreign stock, be invested in standard works on the collateral branches of veterinary science, to be studied in our schools and universities; and a little sum be appropriated for endowing a school like that at Alfort, then our native stock might be so improved and perpetuated as not to need foreign aid.—*George H. Dadd, in the New England Farmer.*

The American Threshing Machine at Mr. Mechi's.—Yesterday, Tiptree Hall was the scene of an interesting experiment, the trial of the American Threshing Machine, or Moffitt's Grain Separator, which excited so much interest in the New York Exhibition. The machine is the invention of Mr. J. R. Moffitt, of Piqua, Ohio, and has been in operation for more than two years in the United States, where it is superseding most others. The whole weight of it is only 12½ cwt., or not more than two-thirds the weight of a common road wagon; and one-third that of an ordinary machine calculated for the same amount of power. As to price, the cost, we understand, is not likely to be more than half that of the machines now in use; and at the moderate speed at which it was working yesterday, it threshed a bushel of wheat per minute—or even more than that, for gentlemen who tried it found that it threshed the bushel in one case in 45 and in another in 48 seconds. The work was only limited by the difficulty

of feeding it fast enough. Much of the lightness and effectiveness of the machine is attained by a beautiful adaptation of the principle of the Archimedian screw to the carrying of the grain through different parts. The band of the sheaf it cut, there being no necessity for untying the knot, and the grain is shaken loose at the mouth of the machine, which is at the top of one end; it is then taken in, and threshed with a spiked cylinder, which it is thought gives more space for the grain to pass through than any other plan; and this cylinder being made of wrought-iron, these spikes or teeth are easily replaced in case of being broken by accident. When threshed the grain does not pass with the straw, but there is an open concave and grate, which allows the grain to pass through by itself, so that there is no chance of breaking it, thus removing one of the great objections to many of the machines now in use. The straw is then thrown on to an endless belt formed of cast-iron and light rods, which receives a shaking or vibratory motion as it passes on — carrying up the straw which is thrown out at the top of the opposite end of the machine, so that any kernel disposed to remain is dislodged, and no grain can pass out with the straw. One great advantage of this open belt is found in the driving rpparatus, so that the looser it is the better it works, and the easier it runs. The dressing part is at the tail end, and all the grain dropping through the concave before mentioned, and the belt, falls into a trough beneath, in which two Archimedian screw conveyors are placed, which convey all the grain threshed directly to the dressing machine, allowing no chance for the grain to waste under the machine after being threshed. Machines of two sizes are built, one smaller than than that in use yesterday, by which two horses will thresh 150 or 200 bushels a day. The only objections we heard made to the machine by practical farmers—and these were pointed out by almost every one who saw it—were that the straw was broken more than by the common machine, so much so as to render it unfit for thatching, and that the cavings and chaff were thrown off together.

As to the cost of threshing by the machine, there were eleven men and five boys employed, and Mr. MECHI estimated the expense, with his four-horse steam engine, which was not going at its full power, at 6d. per quarter; but (and here is a striking proof of the economy of steam power where it can be applied) last week, when worked by eight horses, and with the relay requiring sixteen a day, the threshing cost 1s. 6d. a quarter. In fact, we may close our account of the trial by stating that, with the exception of the points alluded to, the jury of practical farmers returned a verdict of "perfectly successful."—*Essex Herald, Oct.* 29, 1853.

THE PURIFYING EFFECT OF STEAM.—The purifying effect of steam on moldy or decayed substances may not be generally known; and as there are at the present time so many haystacks that seem more fit for litter than fodder, it may be of service to some of your readers if I state from my own experience how this property of steam may be applied so as to render such apparently worthless stuff palatable, and I believe nutritious, to stock. I had last year a stack of oats, which were carried in wet weather. They became moldy, and were found, on opening the stack, to be so white and matted together with the mold that it would be useless to attempt to thresh them out, and the very pigs turned up their noses at them. I therefore determined to try the effect of steam; so cutting up grain and straw together, I put the chaff into a pan (belonging to a STANLEY'S steaming apparatus), and passed the steam through it. The steam that issued was at first very fusty and unpleasant, but in five minutes this became very sweet and fragrant, and on the pan being emptied the chaff had lost all traces of the mold, and had a delicious scent, equal to that of the sweetest hay. I followed up this experiment by cutting up the whole of the oat stack into chaff and steaming it. The horses were remarkably fond of it, and throve well upon it. I tried a similar process this year with equal success upon flooded hay. The grass was cut after the flood (which had lain upon it for ten days, and had swept away that portion of the crop which had been cut previously) had subsided, and was dried, more for the purpose of putting on the top of a stack than for being used as hay. A few days ago this stack was cut into, and I had some of the muddy hay, which smelled more like river weed than any thing else, cut into chaff and steamed, having previously had the silt knocked out of it. In this case, also, I found that the muddy smell entirely disappeared, and the chaff was rendered as sweet and palatable as the best gotten hay could be, the smell emitted during the steaming being very similar to that produced by brewing. When the chaff is cool and dry, it retains for some days this peculiar fragrance. How far such food is nutritious I have not yet fully ascertained; hitherto I have found horses and stock do very well upon it, and prefer it to either good hay or clover unsteamed. It would almost seem as if that good old proverb, "Make hay while the sun shines," must, like many other good old-fashioned things, yield to the encroaching power of steam, or else must consent to appear in this homely guise, "Make hay while the pot boils." At the risk of my credit, I must further confess to having a stack of clover which the heavy rain in July got to before it was thatched; it is in consequence moldy from top to bottom; but instead of turning this directly into manure, for which it seems only fit, I am, with the aid of steam, looking forward to making Christmas beef of it, by the way. How far does mold, if not in too advanced a stage of growth, destroy the nutritious qualities of clover? Fermentation, which presents to us the food in which it occurs, in a state better adapted for digestion, is supposed by some chemists to be attributable to the growth of fungi or infusoria; may not mold, by a similarly dialytical process, leave the clover in a more digestible state, and therefore in a more nutritious condition, if not suffered to extract from it too much of its goodness?—*G. P. S., in the London Gardeners' Chronicle.*

COLIC IN HORSES.—A Tennessee correspondent of the *Pa. Farm Journal* says: The best remedy that I have tried for colic in horses is, one pint of whiskey and two-thirds of a tea-cup of gunpowder. Mix well and drench the horse. In ordinary cases the horse will be well in half an hour.

THE BREEDING AND REARING OF HORSES.

WHERE a farmer has the capital and local advantages required to stock his farm with good brood mares, no other domestic animal pays better than the horse, if bred by a skillful and intelligent man. The business of growing horses for market should receive more attention in this country; and to turn public attention in that direction, we give on this page a truthful engraving of a celebrated Cleveland Bay Stallion—a race combining action, strength, and symmetry of form, in an uncommon degree. For all work, we doubt whether England contains better horses than can be found in the United States; although some of our best families appear to be losing their reputation, if not their good qualities. It is a pretty expensive matter to keep up a considerable stock of males and females of this costly animal; and but few Americans are willing to incur the risk and trouble of such an establishment. In France, the government is at the expense of keeping hundreds of the best stallions in different departments, for the use of breeders, without charge. In this way, the best blood in the world is infused into the horses of the empire, and the cavalry of the French army is said to be unequaled. Our government is innocent of doing any thing whatever to improve the horses kept at such an enormous expense to the nation. If it would establish a large stock farm, and give the funds needed to import a few of the very best breeding animals that the Old World can furnish, these, with what might be obtained in this country, would form the nucleus of an art and a science that have only to be cultivated among us to yield a golden harvest. As yet, we have obtained no firm foundation on which to build an enduring structure. We breed by guess-work, laboring ever in the dark. System is needed, and correct, well understood principles.

▲ CLEVELAND STALLION,
The property of Mr. J. LAWDALE, of Leakonfield Park, near Beverly, for which the Prize of £50 was awarded at the Meeting of the R. A. S. of England, held at York, July, 1848.

Ohio and New York produce more horses than any other three States. In 1850, the first named State contained 463,397; and the last named 447,014. These figures show that Ohio and New York had four years ago 910,411 horses; while the number in all the other States and six territories was only 3,415,241.

In studying the annual reports of different County Agricultural Societies, it has given us pleasure to see the increased attention paid to the improvement of this kind of farm stock. The Tompkins County (N. Y.) Society, in its report for 1852, says: "The show of horses has never been surpassed in our county, including many thorough-bred, and equal to any I have ever seen on exhibition; one and two years old in good numbers, and many brood mares and colts, showing a spirit of improvement." At the annual exhibition in Niagara county, for the same year, 115 horses were entered for premiums—a fact that speaks well for the intelligence of the farmers of that rich agricultural county.

The horse is an expensive animal to keep, especially

where hay is worth twenty dollars a ton, and oats and corn proportionably high. We are keeping three where hay is worth over a dollar a hundred, and find corn and corn fodder the cheapest feed for them. Farm horses must be kept at work at least half of the time, to pay their way. In the winter time they can generally be employed in hauling wood, rails, produce to market, lumber and timber. As it costs no more to feed a pair of good Cleveland Bays than the most clumsy, feeble, ill-formed brutes of the neighing tribe, of equal weight, every reader will see the wisdom of taking great pains to breed first-rate animals. A Cleveland Bay, imported into Kentucky the past year, sold for more than $2000. This breed is adapted to every service on the farm and road—not to sporting. Our object is simply to invite public attention still more earnestly to this branch of husbandry.

A SILESIAN FARM.—We were startled a few months ago by the appearance of a letter by M. ROTSHKE, addressed to M. VON THAER, showing that a farm in Silesia had been cultivated for fourteen years by the application of light artificial manures alone. The soil was of good quality; the subsoil generally rich in mineral resources, especially potash. The feldspars often contained in clays, Professor WAY thinks, may be by decomposition the origin of the double silicate, to which he says the retentive power of clays for manure is mainly attributable. And before him, Professor HODGES of Belfast, alluded to the silicate of potash and silicate of alumina as being the result of the decay of the feldspar of granitic rocks; he showed, also, by his analysis of the granite from Annalong, that it is a rock abundant in mineral elements suitable as food for plants, and gives it as follows:

Silica,	74.30
Peroxide of iron,	3.00
Alumnia,	12.20
Lime,	0.22
Magnesia,	0.45
Potash and soda,	9.33
Fluoric acid and water,	0.50
	100.00

Hence, the decay of the granitic subsoil of M. ROTSHKE was likely to supply very considerable quantities of the elements of the crops. Mr. WAY shows that 20 crops of wheat, of the not unusual quantity of 35 bushels of grain and 2 tons of straw and chaff, will remove only 5540 lbs., or less than 2½ tons per acre; and that if the soil be calculated at 10 inches in depth, and weighing 1000 tons per acre, it will only be .248 per cent. of the soil that would thus disappear. The soil was carried on after a crop-and-fallow principle—a very exhausting one, and, as we might expect, was by no means profitable. M. ROTSHKE commenced, therefore, to sell off. Year after year he carried away the whole of the produce in grain and straw, and determined to replace these bulky materials by small applications of concentrated manure. He began with wheat, and sowed it with 12 cwt. of Rapecake per acre; then followed potatoes, selling all off as usual; then barley, then clover, which he removed and sold off as before; then rye, to which he however applied farm-yard dung; then oats, then clover, plowed up, sown with peas and flax. And by thus acting he made money—sometimes as much as £6 per acre English being realized by this sale of his produce. He did not, however, confine himself to rapedust as a manure; he applied bones at the rate of about 9½ cwt. per acre, and ultimately used Peruvian guano, which he found reason to prefer to either of the above applications. The only manure he had seems to be that of a couple of cows; for he appears to have sold off his horses annually in winter, and then says by these means he made farming a profitable concern. But after all, did he not apply every element in these plants?—carbonaceous and ammoniacal matter in the rapecake, phosphoric and ammoniacal in the bones, and both in the guano? And keeping clean, and being a granitic subsoil, continually dissolving out its elements, with a soil mechanically favorable to the growth of crops, and indisposed to the rapid propagation of weeds, M. ROTSHKE was enabled to make profit of what would easily have ruined others.—*Journal of the Chemico-Agricultural Society.*

WORKING OXEN.—I have long found that in all heavy farming operations oxen are most useful, and I am convinced every farmer, with one hundred acres of arable land, could work one or two pair to great advantage; for deep plowing, drawing SAMUELSON'S Digger, DUCIE'S Cultivator, and numerous other heavy implements, oxen will draw greater weights and as quick as horses. In lighter operations the horses surpass them in speed, but every improvement in agriculture now tends to deep, consequently slow, work; and until steam is adapted to drawing our implements, oxen will be most useful. They cost much less in keep, and improve daily in value; they are easily broken in, may be worked for a few months during a busy season of the year and then fed off. The application of steam to our threshing machines, turnip and chaff cutters, and the railways lessening the distances at which many deliver their grain, has diminished the winter work of many farmers' horses. Oxen would, in these cases, prove very beneficial in the summer. I know one large occupier who commonly buys every spring four or six pairs of working oxen, uses them until all the turnips are sown and cleaned, and then feeds them off in his stalls; and by this course has his work done at two-thirds less cost than by keeping a larger number of horses. In September last I purchased two bulls at £10 each, from two dairy farmers; they are now daily plowing and dragging, and keep pace with the other teams. As a practical farmer, I should be very sorry to be without some oxen as auxiliaries to my horse teams.—*E. W. Wilmot, in the London Gardeners' Chronicle.*

THE value of articles which have passed down the Erie Canal during the season of 1853 is estimated to be $39,626,362—being $5,242,443 more than the value of the freights last year.

THE true order of learning should be, first, what is necessary; second, what is useful; and third, what is ornamental. To reverse this arrangement, is like beginning to build at the top of the edifice.

ONE acquired honor is surety for more.

Horticultural Department.

CONDUCTED BY JOSEPH FROST.

FOREIGN FRUITS.

In the month of November last the Genesee Valley Horticultural Society, at Rochester, was presented with a box of fruits containing *ninety-three* varieties of pears, *twenty-seven* of apples, and *two* of quinces, from Andre Leroy, the well-known and enterprising nurseryman, of Angers, France. Every possible exertion was made to have the fruit forwarded with the greatest dispatch, as they were shipped by steamer from Havre to New York, and from thence per express. In due season the case arrived; and when it was opened it appeared that the moss in which the fruit was packed had absorbed so much moisture that it hastened the decay of many of the specimens, particularly the autumn and early winter sorts of pears. The apples and the remainder of the pears seem to have suffered from the same cause, as they were prematurely ripened, giving the fruit that high rich color and beautiful appearance which it can have only when put up in tight boxes and kept free from air some time. We are informed that the fruit perished in a few days upon exposure to the air, and that the flavor of it was all gone, which causes great regret. If they could have reached us in good condition, the respective merits of many new varieties of fruits could have been tested with which we are unacquainted as yet, but by foreign description. Among the older sorts, judgment could then be formed somewhat of the qualities of the respective kinds of fruits between those grown in this country and the fruit produced in Europe.

The transmission of fruit from one section of the country to another for comparison, all must look upon as productive of the greatest good. This one partial failure we trust will not deter M. Le Roy, or any other gentleman, from making another attempt at sending choice fruit to this country, as it is well known that Mr. Taylor, the noted confectioner in Broadway, New York, has imported frequently from France pears of the finest quality, and exposed them for sale; in fact, we have seen upon his counter, at New Year's, the finest *Vicar of Winkfield* pears that we ever saw, which were received by him but a short time before from Europe. While some of the older sorts sent would not compare favorably, in *point of size*, to those which we have seen grown here, there were others far exceeding in dimensions and general appearance the same kinds grown in America.

To return the compliment which M. Le Roy has shown our Society, it is thought best by some of the leading pomologists here to send him, at the proper season, specimens of our American fruits. Though our pears may not excel, if they equal, theirs, we have not much doubt that we can surprise the French with our apples.

Annexed we give a few of the sorts which attracted our attention most:

Among the new pears there were beautiful specimens of *Beurre Clairgeau* and *Prevost*. The former was fully as fine as any painting which we have seen of it.

Of the older sorts, there were *Beurre de Bollwiller, Bezi Incomparable, Colmar des Invalides, Doyenne Goubault, Messir Jean, Napoleon, Ne Plus Meuris, Pater Noster*, and *Van Mons Leon le Clerc. Easter Beurre (Doyenne d'Hiver* of the French), *Doyenne de Jodoigne*, as well as *Vicar of Winkfield*, were remarkably fine.

Of kitchen pears, we saw *Angelique de Bordeaux, Bonchretien d'Auch, Franc Real, Gil-o-gile, Gros Lucas, Mansuette double, Rateau Gris, Tavernier de Boulogne*, and *Tonneau*, of peculiar shape, signifying barrel in French, which it strongly resembles.

An oversight was made in neglecting to note the different varieties of apples, which were almost wholly of European origin. With but very few exceptions, all of those that have been tested in this country have not proved themselves equal to our best kinds in quality.

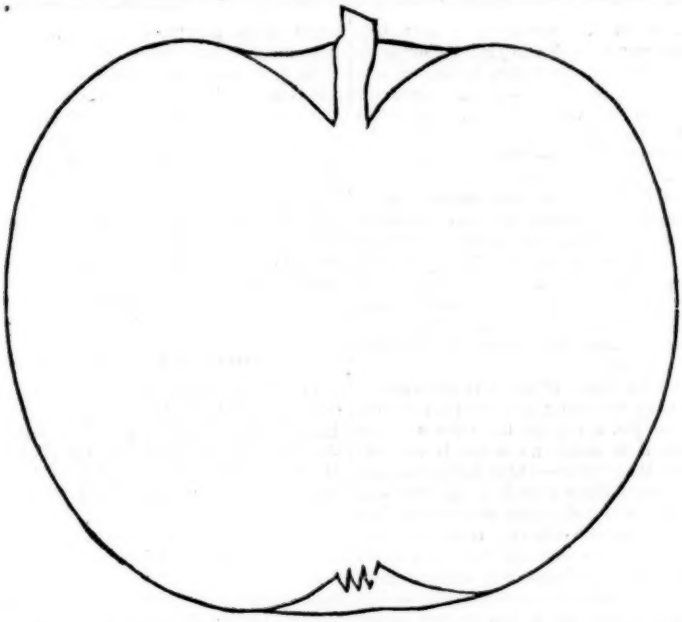
Two specimens of the *Chinese* quince were very ornamental, from their singular oblong shape, but are not fit for eating.

CULTURE OF CELERY.

Mr. Editor—Sir:—As a knowledge of facts is an essential requisite for the proper cultivation of plants, and particularly so when we attempt to improve their flavor by the use of specific manures, I will give a brief detail of my experience in cultivating celery. In the spring of 1852 I prepared a trench for celery plants in the usual way, using plenty of well-fermented manure, &c. The plants were transplanted about the 20th of June, and with copious waterings grew to a good size. When taken up for use, the stems were well bleached, crisp and tender, but the flavor did not please me—it was strong and rank. When preparing my trench last spring, I burnt a barrel of old bones that I had collected during the season (by the way, all the bones I can find I take especial pains to scatter in my garden), and scattered them in the trench to the depth of about half an inch, using much less manure than previously. The plants were set out about the 10th of July. They commenced growing much sooner than during the year previous, and all through the season their color was of a much darker green. When taken up for use on the first of November, I was highly gratified with the success of my experiment. Their growth was not as luxuriant as formerly, but in crispness, juiciness, and agreeable flavor, they were superior to any that I had ever before eaten.

I would like to know the chemical constitution of the plant, in order to determine the accordance of my experiment with the theory of specific manures.
A. D. W.—*Rochester.*

German Prunes.—Mr. Frederick Peeiper, of Indiana county, Pa., has succeeded in bringing this fine fruit to a great state of perfection in this country. He raises immense crops without any difficulty. The value of this fruit, either green or dried, is not second to any of the plum variety.



KING APPLE (TOMPKINS COUNTY).

[We cheerfully give space for an outline of the *King* apple, grown in Tompkins county, in this State, and the following communication in regard to this fruit, which, we are confident, may be relied upon in every particular. At different times the past two seasons we have received barrels of this fruit, and know it to be of the highest excellence, and well deserving of extensive planting. The hardiness, habits, and annual productiveness of the tree, combined with the large size, fine appearance, and superior quality of the fruit, commend it to the attention of all interested in the cultivation of apples:]

Mr. Frost—Dear Sir:—Upon the urgent solicitation of a number of friends, I give you some remarks upon the *King* apple, for insertion in your valuable journal.

Mr. Jacob Wycoff, now deceased, brought into this county about fifty years ago a number of apple scions from New Jersey, which were cut from a very old and nearly dead tree, having no name, which he supposed was a seedling, as the art of grafting was unknown at the time in that section. The scions were grafted here most probably by some inexperienced person, as only one lived, the tree from which is now one of the largest in this neighborhood. The tree grows very rapidly, and is extremely hardy; but in the nursery it does not grow quite as upright as some sorts, though when the top is once formed there is no variety with which I am acquainted . . makes so fine a head. The branches grow quite horizontal, thus leaving the top quite open, on account of which it requires but little pruning. Its bearing habits are remarkable, producing fruit *every season*, while others do not. The fruit is of the very largest size. Its color is dark purplish-red, which is in broad stripes, between which bright red, and particularly upon the shaded side a little yellow, seems to predominate. Its flesh is tender, juicy and delicious, combined with a very sprightly and an agreeably perfumed flavor. It is in eating at once from November till April, though it gradually begins to lose its flavor in March.

This apple is so very popular wherever it is known, that almost every barrel that can be bought is carried out of this neighborhood, at prices from two to three shillings per bushel more than can be got for *Rhode Island Greenings*, *Baldwins*, *Spitzenburghs*, or any other variety cultivated here. Jas. M. Mattison.—*Jacksonville, Tompkins county, N. Y.*

WINDOW GARDENING.

There are many who have not the convenience of a green-house, who are, nevertheless, fond of flowers—who spend considerable sums yearly in purchasing plants, and bestow a great deal of pains in attending to them. It is not to be denied, too, that after all their endeavors their plants frequently look sickly, and finally die. The blame is often laid at the door of the florist who supplied them, for not giving healthy plants, when in almost every instance the fault lies with the buyers. The plants, it is true, which come into market have generally been under a high state of cultivation. They have been regularly watered, potted in soil according to their different habits, and grown in pots according to their size. The heat, air and light have all been arranged and regulated as the utmost skill and experience could suggest. The transition from all this regularity to

the tender mercies of the purchaser is soon felt. Drowning, or starving, or neglecting altogether, is no uncommon fate. The pots are taken home, put into pans or saucers, deluged with water, and the water left in the saucers; or they are set in some conspicuous place and left to their fate. In the first case, the leaves turn yellow and drop, the flowers fall, and in a very short time all that can be seen of them are their naked stems, with little tufts of green on the tops or points of the shoots, which a few days before were in perfection; in the latter case, the plants die with all the leaves and bloom upon them. Nearly all the evils attending plants grown in windows are to be traced to these two causes. I will therefore attempt to lay down a few general rules, which, if properly attended to, will do away with nearly all the complaints under this head:

1. Never water but when plants actually want it. That is easily known by feeling the soil with the finger, or giving the pot a rap on the sides with the knuckles. While it is moist, no water is needed; when it feels dry, then water—which latter will not be oftener than three times a week in autumn and winter, and every day in spring and summer—giving it copiously every time, and allowing it to run away entirely from the plant, so that the pots may never stand in it. The water used should be either rain or river water. If necessarily from the pump or spring, it ought to stand in the air a day or two before using.

2. Give plenty of air at every possible opportunity, when the weather is mild, either by having the window up, or by removing the plants outside. If, in warm weather, this is done under a bright sun, the pots will have to be shaded, as the sun upon the sides of the pots would prove injurious to the young roots, and would greatly injure the plants; and if in bloom and exposed to the sun, the flowers will soon fade and drop.

3. Keep the room where the plants are of as uniform a temperature as possible, and the plants themselves as near the window as is convenient, except in severe weather, when they are better near the center of the room during the night.

4. Examine them occasionally, to see if the pots are full of roots. If this is the case, and the plants are worth it, get some good soil and shift them into pots a size larger; or, if not shifted, be more careful in supplying water, as they will require more when in this state. In summer, water them frequently over the foliage, but not except they also need it at the roots as well.

These may be adopted as very general rules, though more absolutely necessary for some plants than others, but very good for all.

There is a good deal to be considered in buying plants in making the proper choice; for, however gratifying it may be to have those which look best in full bloom, it is most satisfactory to have those which last longest in perfection, especially those which have a succession of bloom, and whose foliage is interesting when the bloom is gone.

This rule may be deviated from in behalf of Tulips, Crocuses, Hyacinths, and other bulbs, which are valuable when little else is in flower. These will also bloom in the darkest streets of our cities. They ought to be purchased either in the beginning of November, when the roots are dry, for planting, or in pots when they are beginning to grow; for if delayed until they are in bloom nine-tenths of their value is lost, because they are interesting in every stage of their growth—from the first formation of the leaves to the perfection of the flower. Every day of development has its charm; and therefore they ought to be possessed from the first. If in pots, all these require a plentiful supply of water when in a growing state; and if kept cool after showing flower, their season of blooming is prolonged. H.

VALUABLE HINTS.

WRITTEN FOR THE GENESEE FARMER.

In a large majority of the States that compose this republic, both Apple and Peach trees are badly damaged by what may be called sun-stroke. When the sun is at meridian, and till after two o'clock P. M., its rays fall with a scalding effect on the exposed stems or trunks of Apple and Peach trees, and the injury is often sufficient to kill both the bark and sap-wood on the south-south-west side of fruit trees not protected by the shade of their foliage, nor by any artificial means. Various contrivances have been resorted to by orchardists to remedy the evil, such as forming low branches and top so as to shade the body of the tree, and putting down broad stakes or boards for the same purpose. A distinguished continental writer recommends the use of straight straw to be bound on the tree longitudinally with osiers. Other ligatures will answer as well.

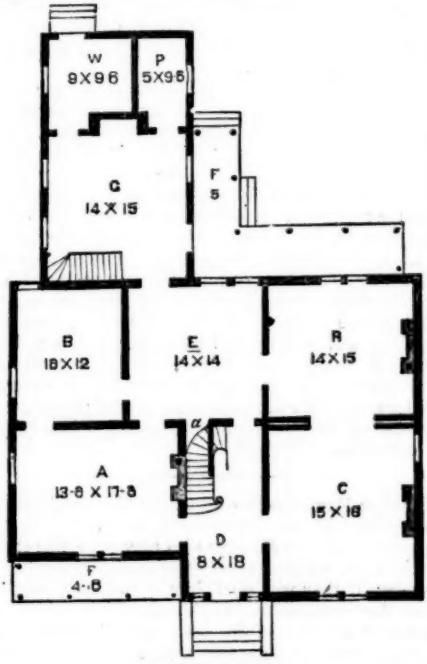
To prevent rabbits and other animals from gnawing the bark in winter from fruit trees, tar is recommended; not coal-tar, for that will kill them, if generally or extensively applied. A pint of tar and dry clay will answer the purpose.

"M. D.," writing in the *London Times*, says:—"When living in the country, with the advantages of a large garden and a plenty of fruit, I always allowed my children a liberal proporton, and I never had occasion to treat them either for diarrhea or skin eruptions, though it is a very common opinion that cutaneous diseases are often brought on by the use of fruit. On first removing my family to town, the usual supply being cut off, two or three of the younger ones became affected with obstinate diarrhea and dysentery, which resisted all the ordinary modes of medical treatment. My opinion on the subject induced me to give them a good proportion of fruit every day, as grapes, oranges, ripe apples, &c., when all the symptoms presently subsided, and they have never since been troubled with bowel complaints or skin eruptions to any noticeable extent." Bilious affections in all their types, except yellow fever, have long prevailed in the most fertile districts of Western New York, and of the Western States; and it is the unanimous opinion of medical men, so far as the writer is informed, that the free use of ripe fruit is one of the very best preventives of this class of maladies. As a question of health, and of sound domestic economy, the community consumes not more than a tenth part of the fruit that ought to be consumed.

L.

COTTAGE IN THE RURAL POINTED STYLE.

This cottage is suitable for a moderate sized farm house, or a residence in the suburbs of a city. Roof projects 3 feet, finished with ornamented verge boards



GROUND FLOOR.

of 1¼ inch plank, and neat verandas with square columns, and a porch over the front door, supported by brackets. The frame is of light timber, and covered with planed and matched boards, from 9 to 11 inches wide, put on vertically, and battened over the joints with inch boards 2½ inches wide. The windows are ornamented with hood mouldings.

The floor plans are arranged as follows: A, living room, 13 ft. 6 in. by 17 ft. 6 in.; B, bed-room, 12 by 15; E, dining-room, 14 by 14; R, library, 14 by 15; C, parlor, 15 by 18, connected with library by sliding doors; D, hall, 8 by 18; G. kitchen, 14 by 15; W. wash-room, 9 by 9 ft. 6 in.; P. pantry, 5 by 9 ft. 6 in. Principal story, 9 ft. 6 in. between joists; chamber story, 8 ft.

The cost of this structure, with cellar under the whole, will not exceed thirteen hundred dollars when completed.—*Merwin Austin, in the Horticulturist.*

A FEW WORDS ON THE VITALITY OF SEEDS.*

We lately entertained our readers with facts tending to establish that seeds, when they are placed in certain conditions, are capable of preserving their vitality longer than we would be inclined to believe, if we judged only by the duration of those which are kept in our granaries and laboratories for daily use. Two of our subscribers, whose attention to this subject was excited by our articles, have communicated to us new facts drawn from their own experience, and which tend still to confirm what we have said of the influence of the medium in which they placed on the preservation of seeds which are subjected to it.

One of them, M. Sarrah, at l'Ecluse de la Chaux (department of the Aude), had in 1817 made a garden which bordered on one side the river Fresquel. The ground was sloping; he leveled it, arranging it in horizontal beds and staged like a terrace. The lowest bed, which ran parallel to the river and nearly

* Translated from the *Revue Horticole* for the *Florist and Horticultural Journal.*

at its level, was frequently submerged by its freshets. Not knowing how to occupy the space he sowed, for want of better, some Persicaria (*Polygonum Persicaria*), and thought no more about it.

The following year, in 1818, he thought he could make better use of this portion of his garden by planting it in Provence reeds (Arundo donax,) which he obtained from Perpignan. This strong growing grass made rapid development, and in less than three years formed a continual barrier, in the thickness of which the river during its overflows deposited a large quantity of mud, which gradually raised the level of the bed. The reeds, each year deeper buried by these deposits, followed the ascent of the soil, by prolonging little by little their rhizomes by the upper part. In the month of February last, M. Sarrail had this plantation destroyed; the rhizomes of the Arundo, which then formed three superposed beds, the lowest being nearly reduced to mold, were dug out of the soil, and the underlying earth transferred for compost to the bed immediately above. What was his astonishment, when two or three months afterward, he saw this bed as well as the excavation whence the earth had been taken, cover itself with an abundant crop of Persicarias! He then recollected the seeds which he had sown 35 years before, and as at the same time he read from our journal, the analogous observation of M. Trochu, he could not doubt but that these plants came from the seeds sown by him at that time, and which were preserved unhurt under the thick bed of mud which the reeds had stopped on the way, and which had solidified in the net work of their root stocks.

Here, as well as in the instance reported by M. Trochu, it is to their burial in the soil, at such a depth that the atmospheric influence could not reach them, that the seeds owed the preservation of their germinative power during so long a period of years. The result would have been very different if, in place of being covered, they had been kept in an apartment as seeds which we destine for sowing generally are, because then the alternations of cold and heat, of dryness and humidity, and especially the prolonged contact with the air, would have developed in them a fermentation incompatible with their vitality. This is a fact of daily experience, and one which gardeners have but too much occasion to observe; every one knows that seeds have less chance to grow the older they are; there is, however, a marked difference in this respect in different species.

The other observation of which we have to speak, and which is due to M. Micheli, is a new proof of the rapidity with which seeds, not sheltered from atmospheric influences, are deprived of life. Having read the notice of M. Trochu, he conceived the idea of experimenting on old seeds whose age he knew exactly, and of a great number of species. He made a sowing in the open ground, during last spring; but a very few plants came up; these were *Cynoglossum linifolium, Chrysanthemum carinatum, Coreopsis deversifolia, Escholtzia californica*, of which the seeds were gathered in 1846; *Convolvulus tricolor, Hibiscus trionum and Ipomœa purpurea*, which were two years older; in the case of a single species, the *Malope grandiflora*, the date went back to 1840, that is, they were twelve years old.

These results conform entirely to those which have been obtained in England; a liberal society which is instituted in that country for the progress of science, and which is called the British Association for the advancement of science, has appointed a commission to study specially this interesting question of the longevity of seeds. In one of its latest sittings, it received from Dr. Lankester, the chairman of this committee, the report of the twelfth experiment on this subject. The experiment was tried with seeds gathered in 1844, a part of which were sown in 1850 and 1851. The result has been the rapid diminution of the number of germinating seeds, as they became older, a result which must be expected after all that we know on the subject; the question, therefore, can be considered as settled, at least in a general manner.

At this same meeting of the scientific society just mentioned, there was again mention made of those famous seeds of Raspberries found in a celtic sarcophagus, which have been sown with success, and of which we informed our readers. In England, as in France, this extraordinary fact has found many disbelievers; but new investigations have been made, with much care, during last year, and they have tended to confirm it. Among other witnesses still living, we may mention Dr. Royle, the celebrated botanist, who had for a long time the direction of the garden of acclimation of Calcutta; he has asserted that he was present when the brown matter containing the seeds, and which had been collected in the remains of the skeleton, was presented to Dr. Lindley, and has further declared that he had no doubt of the truth of what has been said of the germination of seeds preserved under the ground for ages.

The deep burial of seeds, therefore, we repeat is the true and probably the only means of preserving their vitality for any indefinite length of time. We should have been happy, at this time, if our ancestors of some centuries ago had thought of keeping in reserve for us, in this manner, some seeds on which we could experiment. They did not do it, nor could they, because the minds of that day were not turned towards that kind of observations. But why do not we, whom scientific questions interest to so high a degree, prepare this experiment for our descendants? This will be an act of foresight for which they will thank us, and who knows? perhaps which will be a means of transmitting our names to the most distant generations. But the age is so selfish, so strongly preöccupied with the enjoyment of the present, that we scarcely hope to see it seize upon our idea to put in execution. Naudin.

Choice Fruits.—The editor of the Horticultural Department of this paper would be obliged to the subscribers of the *Farmer* who may have fine specimens of the different varieties of apples grown in our country, if they will send him a few from time to time, for comparison. If they should be accompanied with accounts of *the kind of soil in which they were grown, and the manner of culture*, many interesting facts would thus be brought out of importance. Let them be left at the *Genesee Farmer* office. J.

Charity begins at home, but should not end there.

Editor's Table.

AGENCY IN NEW YORK.—C. M. SAXTON, Agricultural Book Publisher, No. 152 Fulton street, New York, is agent for the GENESEE FARMER, and subscribers in that city who apply to him can have their papers delivered regularly at their houses.

OUR contemporaries, the *American Agriculturist* and *Country Gentleman*, have commented on our remarks on "the GENESEE FARMER, the child of Western New York," in the January number; and between them blunders have been committed, which our friend Mr. TUCKER wrongly ascribes to "DR. LEE." Mr. T. says: "The *American Agriculturist* copies from the GENESEE FARMER the claim of the latter paper to the paternity of several of our best rural periodicals, and among the rest, that of the *Albany Cultivator* itself."

The FARMER made no "claim to paternity," whatever. This is what it said: "The patronage which it received, encouraged Judge BUEL to start, some years after, the *Albany Cultivator*, at twenty-five cents a year."

There is no "claim of paternity" in the above statement, while its truth is not denied. Again we said: "The GENESEE FARMER enabled Mr. TUCKER to go to Albany with sufficient reputation and funds to run an honorable and successful career as the conductor of the *Cultivator*."

Nor is the truth of this statement questioned. On the contrary, Mr. TUCKER says truly that he originated and published the FARMER nine years before going to Albany; "and afterward, upon the death of Judge BUEL, merged it in the *Cultivator, started at a later day*." Now, the "merging" referred to, consisted simply in discontinuing the FARMER, and asking its patrons to take the *Cultivator* in place of it. As the FARMER was the property of Mr. TUCKER, he had a right to suppress it; but he could not prevent the farmers of Western New York from having a local agricultural journal, as a medium through which they could profitably "teach one another." The friends and supporters of the pioneer work, unwilling to adopt the *Albany Cultivator* as a substitute for their favorite, the *old* GENESEE FARMER, called the *New* GENESEE FARMER into existence. The same intelligent community that gave vitality and strength to the FARMER, as conducted by Mr. TUCKER, resuscitated the paper after he left, and still make the GENESEE FARMER what it is. It is their work. So warmly did the present conductor sympathise with the farmers of Western New York in this matter, that he wrote a whole year for this journal for four dollars—a sum barely sufficient to pay postage on the correspondence. No matter how many other weekly and monthly agricultural papers Western New Yorkers and others may read, there is not one of them that does or can fill the place of this old, standard work. What paper in the United States gave from official and other reliable sources, the quantity of wheat and rye grown in *twenty-eight* of the principal nations of Europe, in 1851? The January number of the FARMER for 1852, contained this important information; and no other journal in the Republic furnished these valuable statistics. The same number of the GENESEE FARMER gave the number of horses, cattle, sheep, hogs, goats, asses and mules in seventeen of the largest or most populous countries in Europe; and no other paper in the United States has given the information. No other paper has given more than a third of the agricultural returns of the last U. S. Census, that have been published in the FARMER. Who but the FARMER has studied the rural industry of the country so closely as to know and proclaim the fact, that Monroe county (in which it has been published a quarter of a century), now produces a half million bushels of wheat more than any other in the whole Union? Not one reader in a thousand appreciates the amount of severe labor bestowed to arrive at the truths contained in this cheap periodical. We delivered at least one hundred free lectures on the subject, before the farmers and the Legislature of this State could be persuaded to count all the cows actually milked in 1845, in the commonwealth, which was done, and the basis laid for the most instructive comparisons in 1850, and hereafter. Next year another State census is to be taken; and New York farmers appear to be fast asleep. It is the purpose of the FARMER to wake them up, by dealing largely in the great facts of tillage and husbandry, whose importance cannot diminish so long as the earth is cultivated.

A HINT FOR EVERY READER.—An esteemed correspondent, of Somerset county, Pa., says: "After receiving the five copies of your *Genesee Farmer* which I had ordered *for myself*, on showing them to several men, they became so eager to have them, that they took them all from me; so I have none for myself. You will please send me three copies more for this month, if you still have them in reserve," &c. What Mr. JOSIAH SNYDER has done to promote the reading of the oldest, and we believe the most reliable, agricultural journal in the State of New York, at least ten thousand other subscribers may each easily accomplish. We pay fifty per cent. more for setting up the type on this volume than any one before has cost, because it contains fifty per cent. more "ems," or composition. The paper on which it is printed costs a quarter more than that of any previous volume. Add to these large expenses that of stitching and trimming every number of the work, and the reader will see that our profits are next to nothing, on the *Genesee Farmer*. In noticing it, our friend BATEHAM, of the *Ohio Cultivator*, says: "The GENESEE FARMER promises to continue at the *too low price* of fifty cents a year, under the able management of Dr. LEE, whose talents ought to command a larger sum in these prosperous times, or at least secure for the paper an immense circulation."

The latter is what we desire to see—not as a matter of personal gain, for we shall expend the profits in premiums, chemical apparatus, and other means needful to advance the rural knowledge of the United States. With one-fourth the circulation that our paper now has, if sold at the same price of most monthlies, our net profits would be ten times larger than at present. The *Farmer* ought to have a million of subscribers, and five millions of readers, in a nation that contains a population of twenty-six millions, three-fourths of whom look to the farm and the garden for their support. A volume of the *Farmer* will cost club subscri-

bers but thirty-seven cents,—a sum so small that it cannot possibly interfere with the reading of other agricultural journals. Ours is emphatically a pioneer paper, designed to cultivate a taste for agricultural literature and science among the largest number of citizens. Since it was started, *sixty papers* of like character have been called into existence; and if properly patronized, it will soon create a market for sixty more, and better rural journals. This country now supports about three thousand political papers, and one thousand only of all others. Our thirty years' experience in writing for the press, teaches this fact: Farmers will, by force of long habit and education, pay one five times more for a political article, which we can write in thirty minutes, than for an agricultural essay involving years of patient research, and elaborated by thirty hours' severe toil. We do not complain of this, for political papers are two centuries old, while those devoted exclusively to agriculture and horticulture are, comparatively, the creations of to-day. The latter must soon undergo great changes; for the owners and cultivators of the soil will see their utility, and the necessity for their improvement. With an addition to our subscription list, we can make the *Farmer* twice as valuable at its present price.

PREMIUMS FOR VOLUME XV., SECOND SERIES.—The liberal premiums offered for subscribers to volume fifteen, second series, of the *Genesee Farmer*, commencing on the first of the present year, have attracted deserved attention. When the names of the successful competitors are announced in May, some that might easily have won prizes worth having, will regret their neglect to do so; and we respectfully give such a hint, that it is not now too late to take the field and achieve the most satisfactory results.

We are profoundly thankful to our numerous friends for giving this old pioneer work, which came into being with the first log-cabins of the West, a hearty welcome to their firesides. Long and faithfully has it labored to promote the great farming interest of North America, without once turning to the right hand or the left, to advance any personal or private interest whatever. Seven years ago, we wrote and published in the January number of the *Farmer*, 1847, the following paragraph:

"The farmers in the vicinity of Edinburgh, give Prof. JOHNSTON five hundred pounds a year (some $2,500), to keep up a laboratory for the benefit of their sons, for the analysis of soils, fertilizers, &c. Permit us to state a few facts by way of contrast. While we have written nights, when farmers were asleep, for political papers, that our days might be devoted to the advancement of American Agriculture, we have actually expended two dollars for every one that we have ever received from the agricultural community, in the purchase of chemicals, apparatus, geological maps, specimens, &c."

Our subsistence is derived from other resources than the *Farmer*; and therefore we are willing and able to expend the income from the paper in the way which it is believed will do most good to the public. No man can carry property with him from this world to the next, and a very little food and raiment will suffice during the few years that he lingers on this side of the grave.

Conducted on so broad a principle, and designed to elevate the standard of rural literature, science and practice, the *Genesee Farmer* has peculiar claims to the confidence and support of its readers. It carefully avoids all the humbugs of the age, so prolific of quackery and upstart pretension in every department of human knowledge. In exposing these, it unavoidably makes some bitter enemies; and therefore it needs the active assistance of all honest persons. If such will show this number to their friends, many new names may be added to the present list, and we can go on improving the work with equal pleasure to the writer and profit to the reader.

FARMERS' COLLEGE IN OHIO.—In Hamilton county, near Cincinnati, there is a flourishing educational institution, which was commenced in 1833 by Mr. F. G. CARY, as a private enterprise, under the name of "Pleasant Hill Academy." In process of time, this academy became a literary college, with a board of directors, and its annual catalogue now numbers 321 pupils, over 200 of whom are in attendance. Hitherto it has been a "farmers' college" only in name, for the simple reason, as we understand, that the officers of the institution had not the funds required to purchase and put in proper order a farm, and endow professorships of rural sciences. The founder of Pleasant Hill Academy, and President of the College, has recently resigned, that he may devote his whole time and talents to the commendable labor of procuring the funds necessary to establish a first class institution for the professional education of young farmers. In the circular issued by the board, we find the following remarks:

"The old doctrine has been repudiated, that a man can not be a respectable scholar and worthy the honors of a college, unless he has devoted the greater part of six years to the study of the ancient classics. Ample facilities have always been furnished to such as desired to prosecute a strictly classical course; but such students have not received honors in this institution, to the exclusion of those who have acquired an equivalent amount of knowledge in the scientific department."

This middle course is equally safe and wise. As a life-long friend of industrial education, and schools of applied sciences, we protest against the fanatical folly of proscribing the ancient classics, while opposing their preposterous claim to paramount consideration in the last half of the nineteenth century.

Ohio is now in a fair way to call into existence the first agricultural college in the United States—an honor that will in future years redound more to her glory than any which any member of the confederacy has yet achieved, not excepting our own "grand canal." It gives us great pleasure to see the *Ohio Cultivator* lend a helping hand in this noble enterprise. That print truly says: "The losses that our State annually sustains by the impoverishment of her soil, by deficient crops and misapplied labors, arising from ignorance of the principles of agricultural science, we have no doubt are greater than would be the cost of establishing a first rate agricultural school and experimental farm in every county, and of educating all the sons and daughters of our farming population."

For thirty years we have preached this doctrine, and might appeal to official reports made to our State Legislature and to Congress, as vouchers, if they were needed.

OUR own distrust justifies the deceit of others.

TRANSACTIONS OF THE NORTH WESTERN FRUIT GROWERS' ASSOCIATION, at their Annual Meeting at Chicago, October, 1853.

We have received and perused with unusual interest, a copy of the Transactions of the Association above named. The Address of Mr. J. A. WRIGHT deals freely in flowers and fruits, and is calculated to kindle in the reader a love for the beauties of Flora and the healthful sweets of Pomona. We have marked some passages for our pages, when they are less crowded than at present.

Mr. KNOWLES and Mr. STETSON have kept curculios from injuring their plums, by winding cotton batting about the bodies of their trees. Mr. K. applies the cotton near the ground; Mr. S. prefers to use it about the trunk, high up, near the limbs. Mr. EDWARDS, of Bureau, has tried the plan recommended by Mr. BREWSTER last year: putting soap-suds, refuse whitewash, and urine, about the roots of the tree frequently in the curculio season. This practice he found entirely successful, and regards it as a perfect protection. Mr. BREWSTER being present, stated that the tree he spoke of as bearing so profusely last year, had done the same this season. He would recommend to apply the wash frequently and profusely on the ground, as far as the limbs over it extended. Mr. HANDFORD kept hens and chickens in coops under his plum trees, when the curculios propagate their kind, and thereby destroyed the insects, and had an abundance of plums. Mr. BELLANGEE had been equally successful with poultry in his fruit yard.

The discussions of the Convention were eminently practical, pertinent, and in the main, instructive. The President of the Association, Dr. KENNICOTT, and others, deserve commendation for getting up and sustaining so useful and prosperous a Society. The Letter of Mr. KIRTLAND, on the Pear, contains facts and suggestions of sufficient value to be recorded and stereotyped in the GENESEE FARMER. It will appear in our next, with some comments by the editor.

A NEW AND COMPLETE GAZETTEER OF THE UNITED STATES: By THOMAS BALDWIN, and J. THOMAS, M. D. Philadelphia: LIPPENCOTT, GRAMBO & Co., 1854. 1364 pages, 8vo.

This is unquestionably the best Gazetteer of the United States, by far, that has ever been placed before the American public; and its value is increased by the fact that it is brought down as far as practicable, to the year 1853. Some idea of the accuracy of the work, and the amount of labor which has been expended upon it, may be obtained, when we state that the author procured the services of some two thousand correspondents in all parts of the country, and accounts of all the cities and other places of importance, were derived from actual residents. It contains about 10,000 names *in addition* to those of any other Gazetteer of our country, yet published; and unlike most others, contains an accurate review of the *present state* of a rapidly improving country. The full and comprehensive statistics which are furnished, up to the latest date, are of the most satisfactory character.

THE Second Annual Meeting of the U. S. Agricultural Society will be held at Washington, D. C., Feb. 22, 1854.

TEMPEST INSURANCE COMPANY.—A Stock Insurance Company, with a capital of $250,000, has gone into operation in Cayuga county, in this State, designed to insure the dwellings and other buildings of farmers, or isolated buildings, and no other, against loss and damage by fire and lightning. By refusing to take risks on city and village property, which is many times more exposed to conflagration than isolated farm buildings, the responsibility of the Company is substantially *insured*, while it is able to insure houses in rural districts on much better terms than could be done were its business less restricted. The principle of insurance has gradually risen in the public confidence, in all civilized nations, during the present century. Like other useful inventions, it is liable to abuse; but from all we know and believe, the Company, whose advertisement may be found in this number of the FARMER, is entitled to confidence.

Notices to Correspondents.

MR. D. B. STUART, of Laurel Point, (Va.,) gives us a favorable account of the railroads in progress in that State, and awards censure and commendation to such as are deserving, with apparent impartiality. The Merino sheep are not liked so well as the Cotswolds, as mutton and common wool are more saleable than fine wool in that district. Their "meat cattle are wofully defective," though Eastern Virginia is thought to be worse off. Hogs are their best domestic animals. Will not Mr. STUART give our readers some account of the value of farms and wild lands in that region? What are your principal crops; and how much corn, wheat, and oats do you raise per acre?

MR. JOSEPH HARRIS has sent us a letter, with a request that it be published, complaining that in our brief notice of several gentlemen who have been successfully connected with this journal during the last twenty-five years, sufficient prominence and minuteness of detail were not accorded to *his* services. We were under no obligation to name Mr. H. or his prosperity at all; and we regret that he should constrain us to believe it almost impossible to extend kindness and consideration to a young Englishman, and not induce him to take on airs as unbecoming as they are characteristic.

MR. THOMAS HARPER, of Berrysburg, writes that the farmers in that neighborhood are improving their lands very much, by the application of lime, at the rate of from 50 to 100 bushels per acre, during winter and spring. Their system is to plant first with corn, then sow oats, manure, and seed with wheat and clover; soil, red shale. Lime costs six cents at the kiln, and is hauled from five to six miles. Mr. H. has our thanks for the interest he has taken to extend the circulation of the *Farmer*.

MR. R. THORP, of Taylor, Illinois, writes that the *Genesee Farmer* induced him, Mr. ARNOLD and Mr. EARL, the past year to experiment in growing each an acre of corn. The results were, that Mr. T. raised 139½ bushels of shelled corn on an acre; Mr. A. 122½ bushels; and Mr. E. 93½ bushels. We wish that all our subscribers did as well.

A FRIEND in Canada calls our attention to the fact that plowing generally in the State of New York, is inferior in workmanship to that done by Scotch farmers there, "whose pride it is to excel in the rural art of guiding the plow.' All we can say is, that we have some Scotch farmers in Caledonia, Wheatland, and other towns in Western New York, and others innocent of any connection with the "land o' cakes," who excel the mass of cultivators in the Provinces, in breaking and turning "the stubborn glebe."

MR. HERVEY JOHNSON, of Holland, in this State, who has taken the *Genesee Farmer seventeen years*, and is seventy-eight years old, is entitled to our best thanks for the interest he still takes in "the noble cause of agriculture." If New York had one hundred thousand such men, its farming lands would soon be worth four times their present value; for tillage and husbandry would then be studied and practiced in the most successful manner.

MR. A. CHAPIN, of Carroll, has sent us a very satisfactory answer to the common objections to subscribing for and reading agricultural papers; but our patrons stand in small need of such arguments, however meritorious, and our friend will excuse the omission of his remarks. How to make people read and improve, who have no taste for knowledge, and no desire to improve themselves and families, is a difficult problem to solve.

MR. N. PARK, of Beaver (Pa.), says that he lives on a lot only 50 feet by 180, and that hints derived from our paper, have enabled him to make a highly productive garden, and to have the promise of a very profitable fruit yard. Thousands of house-keepers in a small way, find recipes worth to them many times the cost of this monthly visitor.

THE Postmaster at Colden, Erie county, N. Y., who enquires if the *Genesee Farmer* is published in the German language, is respectfully informed that it is not. We are, however, translating from the best German authors, valuable articles into English for the readers of this journal.

Inquiries and Answers.

SHELL MARL.—I desire some information in relation to the value of shell marl as a fertilizer, as there has been a large quantity of it discovered in this town the past summer. There are a number of subscribers to the *Farmer* that would be glad to hear your opinion about shell marl, and some directions in regard to applying it, and how much to the acre. There has been a number of beds of marl discovered in this county quite recently, and you will confer a great favor on the farmers here by giving your opinion in relation to it through the pages of the *Farmer*. J. H. DYE.—*Ballston Spa, Saratoga county, N. Y.*

Shell marl, when pure, is a valuable fertilizer in all cases where the soil lacks lime; and when the marl is impure, it is useful in the same degree that it partakes of the calcareous element. In Saratoga county and the counties adjoining it, the soil generally contains no more lime than exists in the drift formation of New England and Eastern New York, which is only about one-tenth of the quantity found by us in the best soils of Western New York. In Eastern and Southern Virginia, in parts of Maryland, North and South Carolina, and in Georgia, shell marl has been used with the most satisfactory results. Gov. HAMMOND, of South Carolina, informed us while going over his extensive plantation, that he had applied over 200,000 bushels of such marl; and we have visited a score of farms in different States on which it has been tried for many years with beneficial results. Six years ago we analyzed the marl at Shell Bluff, on the Savannah, in Georgia, and found it to contain from 60 to 98 per cent. of carbonate of lime. If our correspondent will get up a good club of subscribers to the *Farmer*, and send us fair samples of two of his largest beds of marl, we will analyze sufficiently to indicate its agricultural value, and charge him nothing for our trouble. Send some two ounces in each package, by mail, and pay postage. It is now nearly forty years since Mr. EDMUND RUFFIN, of Virginia, began to use and commend shell marl for the improvement of poor lands. We have heard intelligent Virginians say that his experiments and suggestions in this matter had been worth several million dollars to that part of the State where marl abounds. Its effects are not always immediate, but seldom fail to be seen in two or three years. It is customary to apply from 100 to 200 bushels per acre, spread broadcast, before plowing. As a top dressing on meadows and pastures it is highly beneficial, for rains dissolve the lime and convey it into the soil that needs it. We are hauling oyster shells several miles, to burn and apply to our experimental farm in the District of Columbia.

FROM one-half to three-fourths of nearly every village garden within my knowledge is planted year after year with potatoes, and it is generally found convenient to plant them in the same part of the garden every year, rather than disturb the arrangement of beds of flowers, and other vegetables. In this manner it must be that the soil has become quite deficient in some of the ingredients necessary to produce potatoes, and it is not convenient to renovate it by rotation of crops. What would be the most appropriate manure to use on a strong clay soil, to supply such a continual demand for one set of ingredients? Has guano generally proved beneficial to potatoes? H. K. W.—*Clay, N. Y.*

Wood ashes liberally applied will supply all the earthy elements taken out of the ground by the culture of potatoes. If the soil is poor in organic matter, add well-rotted stable manure. Forest leaves yield rich manure for potatoes, as do decaying turf. On soils that naturally lack lime, this mineral should be mixed with ashes.

IF I clear off five acres of good timbered land in the "green," and grass the same five years, and "deaden" a like quantity of the same kind of land at the same time, then in five years clear it off and burn all the wood on the ground, which would produce the best crops for the longest time, without artificial means (the wood of the first all being removed off the ground)?—A. B.—*Leesville, Indiana.*

The above is an interesting inquiry, and we hope that some of our intelligent readers will take up the subject, and give us for publication their experience and views on clearing land of its native forests.

IT would be interesting, and a matter of much importance to many readers of the *Farmer*, to know whether the assertion that "water under ground can be found by means of a crotched stick," is truth or fiction. I see it is put down for a fact in the Patent Office Report for 1851, but I always thought it a consummate humbug. N. H. Y.—*Auburn, Pa.*

Our opinion of the *art* of telling where water may be found by any "divining rod," differs not much from that of our correspondent; yet we allowed the writer in the Patent Office Report referred to, to have his say in the matter. In former years the subject attracted a good deal of attention. A sharp lancet will point as unerringly to

where blood may be found in the human body, as a forked stick or willow twig to where a stream of water exists under the surface of the earth.

I TAKE the liberty of troubling you with a few questions on what I consider an important subject,—the relation of the ascending sap of a plant to the substances that should be applied as fertilizers. Whether those elements of plants that are dissipated by burning, are found in the ascending sap, and consequently are absorbed by the roots? since if this is the case, the ash is no guide to the determination of what elements should be applied as manure, but rather the sap.

There are many experiments on record in which plants and shrubs have been grown in boxes, and the earth weighed on first planting, and again when its soil arrived at maturity, without any apparent loss, from which it has been argued that plants derive their whole support from air and water, with the inorganic moths contained in the latter. A careful analysis of the ascending sap of a plant would show whether these elements are absorbed by the roots, and in what quantities. Can you tell whether they are thus absorbed at all, or how much?

The sap of a luxuriant plant in different stages of growth, would, I think, show correctly what fertilizers should be applied, as we have here all the elements consumed by the plant, both those applied to growth by aggeration, and those used to support the vital functions of the plants. It may be that plants derive benefit from absorption through their leaves, of gases eliminated by fertilizers applied to the roots.

Please give us whatever you may consider worthy of the subject, in the pages of the *Farmer*.—G. WILLARD.—*Portland.*

Oxygen and hydrogen, which form about half the weight of the combustible part of all plants, enter the roots as *water*—the surplus of which evaporates from their leaves and other surfaces. The ascending sap of plants is water that contains a little carbon, nitrogen, and earthy salts in solution. These all exist in the soil, and some of them in the atmosphere. We will discuss this subject at length, soon.

IN your July number, Mr. J. M. BRADBURY, of Sparta, O., inquires if any one can inform him how to exterminate rats. GOLDSMITH, in his Natural History, states that nuxvomica, or the Quaker's button, as it is called here, was the best known poison at that time, and as it was harmless to cattle and horses, it should be ground and mixed with meal. I have tried LYON'S pills, of New York, with some success, but they did not exterminate them. Has the inquirer, or any of your numerous subscribers, tried the English rat-catcher's recipe, published in DAVID YOUNG'S Almanac for 1850? I have not tested it myself, but I have known them to be attracted by hundreds. This seems to have been known only by few; but DAVID YOUNG stated in his almanac that that was the genuine recipe. I saw the almanac at a neighbor's, but did not copy it at the time, and when I inquired for it in order to do so, it was torn up. I have said this much in order to induce some of our farming friends who have got this recipe, to publish it to the wide world, so that whoever is troubled with these vermin can prepare it for themselves, and not depend upon imposters. This fall my son bought a small tin box of rat exterminating compound, of great and fulminating power, to be put on bread, with melted butter and sugar; this would not poison them, but burst or *blow them up*. They would not eat of it but very sparingly, so I think they escaped unhurt; thus we are humbugged. I remember three of the ingredients which I have tried with arsenic, put on roasted pork or beef, and a little of the mixtures on the same, which are, oil of rodium, oil of annis, and asafœtida. I should feel grateful to any of your numerous subscribers, if they would inform me through the medium of the *Farmer*, what is the best remedy for pigs that are troubled with fits. I have known several, and have heard of many others, some of which died in a few days, and others got over them.—JAMES ROBINSON.—*Lebanon, Jan. 5, 1854.*

MEADOW WILLOW.—I have a piece of dry, rich bottom land, that is set in creek or meadow Willow, which I wish to clear up. Canst thou or any of thy numerous readers inform me how to extirpate them? I have tried grubbing them, but the roots that are left in the ground will sprout again. The land is too subject to overflowing, or too low to plow. N. B.—By giving an answer to the above query through thy columns, thou wilt oblige a subscriber.
J. M. W.

MR. D. MCMILLAN, Jr., of Oak Hill, Ohio, says: "My time is principally devoted to the feeding of cattle, and I am much in need of convenient and comfortable cattle stalls for winter, so arranged as to save both the liquid and solid manure. If you can, without inconvenience, give draft or description of a cattle shed, you will confer a great favor." The latest improvement in cattle sheds, as distinguished from closed stables, consists in making a large shelter over a yard, in which stock may either be turned and kept loose, or tied up, according to their quiet habits and manners. Their food is placed in stout boxes, to keep it from under their feet; while all their droppings being under cover, are not leached by rains and melted snow, as in open yards. If one has straw, corn stalks, forest leaves, or swamp muck to scatter over the covered yard, and absorb all liquid and semi-liquid manure, the amount made in winter, and ready for use in the spring, may be increased fifty per cent. In mild climates, cattle stalls under open sheds answer an excellent purpose.

MR. A. B. FULLER, of Berea (O.), makes the following interesting inquiry: "Whether there is any possibility of injuring cattle by giving them cut corn stalks? In some parts of this State, cattle have died apparently from no other cause. Report says their intestines were literally cut to pieces. I had thought of purchasing a cutter, but my stalks are large, many of them twelve feet long, and consequently thick and hard at the butts. I would like you to express an opinion through the *Farmer*, in reference to feeding Ohio corn stalks." We should not feed the main stalk cut, unless steeped soft in boiling water. We once fed fifty cows on cut corn stalk (cut by horse power) which were steeped several hours in boiling water, and then mixed with wheat bran and shorts, or corn meal. We have at this time 25 acres of corn stalks lying on the ground in heaps, to rot for manure—the leaves and husks, or "shucks," being saved for forage.

OUR friend ELIHU HESS, asks too many questions about the wind-mill described by Prof. KIRTLAND, the pump it will operate, fish ponds, the analysis of clover, silica, &c., to be likely to receive satisfactory answers. Water may be raised more than 28 feet by a wind-wheel sufficient to work either a force pump, or one that lifts the column of water above the valve in the piston rod. A fish pond should have a more uniform supply of water than any wind power would furnish. Mr. H. wishes to learn the size of the sails on the wheel described by Mr. KIRTLAND; and if any reader can give the information, we will gladly publish it. "Silica" is the scientific name for pure flint sand, an element that rarely needs to be applied to any soil, and if attempted in this country would be likely to cost too much for any profit.

WE cannot inform our correspondent in Washington county, whether his "Grape Frame" is patentable or not. That question can only be decided at the Patent Office. We have uniformly declined being interested in patent rights, that our writings may at all times be free from any taint of personal and private objects.

MR. CHARLES WHITE, of New Harmony, raises the question as to the fact whether pumpkins tend to dry up the milk of cows, when fed to them? Some say they do; others, that they do not. Who can throw any light on this matter?

Our friend W. T., of Clifford (Pa.), is informed that to mix sulphur with salt, is perhaps the easiest and best way to drive lice off cattle. One-third sulphur and two-thirds salt eaten by neat stock, will so medicate the blood and excretions from the skin, as to either kill all lice and ticks, or cause them to drop off. He wishes to know where Chase's Patent Ox Yokes can be bought, and the price per dozen. Who can give the information? Such articles should be advertised.

Mr. Caleb R. Hobbie wishes to learn through the medium of this journal, whether he is to expect smutty wheat at his harvest, if smut is mixed with his seed when sown in autumn. What say the wheat growers who read the *Genesee Farmer?*

Bee Moth.—I have purposely delayed answering the inquiry of Mr. Mishler, of Ohio (*Genesee Farmer*, July, 1853), until the season of operations has arrived. Now, when the bees are inactive, raise the hive gently, cut away the comb two inches, cleanse the lower edges of the hive, and hew or scrape away all filth from the bench. Early in March renew the operation of cleansing and destroying worms, which continue until the warmth brings the bees down to cover the comb, and the danger is usually over till fall. With a lighted candle visit the hives during the warm evenings of summer and destroy the millers, which are busily employed in depositing eggs in every crevice about the hive. Nearly all the swarms that have been destroyed by worms have been occasioned by the want of an opportunity for a *beginning* in the lower part of the comb, when the bees are crowded to the upper part of the hive during cold weather. The propriety of keeping the comb shortened will be obvious.

When the moths have formed a nest in the comb, the only safe remedy is to take them out. Raise gently one side of the hive, and blow into it tobacco smoke, which will quiet the bees. The hive can then be taken to any convenient place, and the affected comb taken away. Bees are easily quieted by blowing tobacco smoke upon them gently—too much will injure them. The operation must be performed in warm weather, during the fore part of the day—never meddle with bees at night, unless you wish to be "pierced with many sorrows."

The best hives for protection against the moth are those that have the fewest crevices: a narrow, long hive, for those not familiar with their management. Those who are, may dabble with the patent humbugs of the day to their heart's content, about nine-tenths of which have been invented by persons ignorant of the nature and wants of bees, to please the fancy and gull the unwary. But few improvements have been made upon Mr. Week's patent, or Mr. Miner's, for those who are practical apiarists are exceptions. The great points to be observed are—1st, a hive that affords free circulation of air at all seasons; 2d, protection from extreme inclemency; and 3d, dense shade. No hive has, or ever can be, invented to keep out the moth.

I have kept from three to twenty swarms for twenty-five years, and never lost a swarm by moths while subject to my directions or personal care. Owen T. Hobbs.—*Randolph, Crawford county, Pa.*

HORTICULTURAL.

Osage Orange. (S. C., Centertown, Pa.) The seeds can be had of D. McAvoy, seedsman, Cincinnati, Ohio, at $30 per bushel,—perhaps at a less rate. But very little attention is required to grow the plant. As soon as warm weather approaches in the spring, the seed should be sown in good mellow ground, in drills, as one would any kind of garden seeds, covering them about an inch. Make the rows or drills from 12 to 18 inches apart. The seeds will soon vegetate, and all that is then required to make them fine plants, fit for planting them in hedges by autumn, is to keep the ground about them free from weeds.

Disease of the Plum Tree. (M., Lewiston, N. Y.) It is quite doubtful among Pomologists as to the cause of the black knot on Plum trees. Many opinions have been given, arriving at about as many conclusions. The best that can be done with a tree attacked with it, is to cut off the infected limb or limbs, some distance below where the disease seems to have extended, immediately upon its appearance, and destroy them. The tree may then assume its accustomed vigor; if left uncared for, it will soon be so completely covered with the wart as to be worthless.

Apple Trees—Root Grafting. (A. G. M., Chesher's Store, Ky.) No one succeeds by grafting Apple scions upon pieces of roots of old Apple trees, as the roots are succulent, and destitute of those fibers which are necessary to form good plants. They should not be used while Apple *seedlings* can be obtained at such a trifling cost. It is impossible for us to give space in this journal for the details of root grafting, but we commend to your attention *The Fruit Culturist*, by J. J. Thomas.

Stocks for Fruit Trees. (J. M., Pittsfield, Ill.)—Apples grafted upon your native Crab Apples, would undoubtedly be much more checked in their growth than if worked on the free stock; but they could not make very dwarf trees or bushes, unless you root-pruned them. The finer sorts of Plums do well upon the "Wild," or Native Plum, but they require to be grafted at or below the surface of the ground, as the scion of some varieties grows more rapidly than the stock,

Pears for Market. (P. B., East Aurora, N. Y.) The following sorts we recommend as the most profitable for orchard culture upon the Quince stock: *Bartlett*, a summer pear; *Beurre Diel, Doyenne White (Virgalieu), Duchesse d'Angouleme, Louise Bonne de Jersey*, autumn varieties; and for winter, *Vicar of Winkfield*. If cultivated upon the Pear stock, we would add the *Flemish Beauty*, an autumn kind, and the *Lawrence*, a winter sort.

Dwarf Pear Trees. (H. L. F., Willoughby, O.)—Pears on Quince Stock will do well upon new rich land of black sandy loam mixed with yellow sand, being dry enough for wheat or corn.

Apples. (D. B., Chili, N. Y.) The apple you left with us for examination was the *Baldwin*.

ADVERTISEMENTS,

To secure insertion in the FARMER, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers. TERMS—Two Dollars for every hundred words, each insertion, PAID IN ADVANCE.

PERUVIAN GUANO.

WE are receiving our supply of Peruvian Guano, per ships "Blanchard," "Senator," and "Gray Feather," from the Chincha Islands, and are now prepared to make contracts for the spring supply. As the demand is large, we would advise all who may be in want of this excellent manure to make early application. Price, $50 per ton of 2000 pounds. Be particular to observe that every bag is branded—

No. 1.
WARRANTED PERUVIAN
GUANO.
IMPORTED INTO THE UNITED STATES BY
F. BARREDA BROTHERS,
FOR THE PERUVIAN GOVERNMENT.

LONGETT & GRIFFING,
State Agricultural Warehouse, 25 Cliff street, New York.
January 1, 1854.—3t.

POULTRY.

To the Poultry Dealers and Fanciers at the South and West.

THE subscriber is now prepared to fill orders to any extent for any known variety of choice imported and domestic Fowls, Geese, Ducks, Turkeys, Swans, and Pea and Guinea Fowls, and will sell stock by the pair, trio, or lot, at very reasonable prices. Those who buy to sell again supplied on favorable terms. I will warrant all Birds sold by me to be equal in all respects to any in the country. Stock can be safely sent to any part of the United States. No charge made for cages. J. W. PLATT,
February 1, 1854.—2t Rhinebeck, N. Y.

Brahma Pootra Fowls and Eggs for Sale.

THE subscriber offers for sale the most beautiful Brahma Pootra fowls that can be found in the country. Also, eggs from the same fowls next spring and summer. Price of fowls, $10 to $50 per pair; eggs, $6 per dozen. Also, Buff-colored Shanghaes and Eggs. Fowls cooped, and eggs carefully packed in spring boxes and sent to all parts of the country, by addressing, post-paid,
E. GILES,
February 1, 1854.—2t* Sanquoit, Oneida Co., N. Y.

Brahma Pootra Fowls for Sale.

THE subscriber has fifty pairs of the above fowls for sale, of pure blood. He also offers for sale the coming spring eggs for hatching, from fowls which he selected to breed from. Also, Black Spanish eggs, from imported fowls. THOS. WRIGHT.
Utica, February 1, 1854.—3t.

Short-horn Bulls and Suffolk Pigs for Sale.

I HAVE three one-year-old Bulls, got by my imported Bull VANE TEMPEST. Color—Red and roan. Also, a few choice pairs of Suffolk Pigs, bred from my imported stock.
Auburn, N. Y., Feb. 1, 1854.—2t. J. M. SHERWOOD.

Suffolk Pigs.

THE subscriber is prepared to receive orders for purely bred Suffolk Pigs—breeding Sows and Boars.
GEORGE HUNTINGUON.
Walpole, N. H., Feb. 1, 1854.—1t*

Fertilizers.

PERUVIAN GUANO, Pulverized Charcoal,
Superphosphate of Lime, Ground Land Plaster,
Bone Dust, Sulphuric Acid,
For sale at the State Agricultural Warehouse, No. 25 Cliff street, New York. LONGETT & GRIFFING.
February 1, 1854.—3t

Osage Orange.

GOOD, strong plants, for sale low. If desired, they will be shipped at our expense to Cincinnati, Louisville, or Buffalo. Directions given for making a perfect Hedge.
Also, EVERGREENS—Balsam Fir, White Pine, Yellow Pine, &c. &c.—at wholesale. TEAS, GOLDSMITH & CO.,
February 1, 1854.—2t Indianapolis.

Cutter Rights for Sale.

WE will test our Hay, Stalk and Straw Cutter, patented November 8th, 1853, for speed, ease and durability, against any other in the United States. J. JONES & A. LYLE.
☞ For further information, address JONES & LYLE, Rochester, N. Y. February 1, 1854.—tf

A Farm and Nursery for Sale,

CONTAINING 100 acres of land, and is the premium farm of Allegheny county. It is in the highest state of cultivation. Ten running springs, and lime and freestone in quarries, are on the premises. The fields and woods are spun over with Locusts, fit for posts. It is a grain-growing farm; 600 bushels of wheat, a field of corn and oats, and about 40 to 50 tons of hay, have been the produce per year. The improvements, five years ago, cost $6000, which consist of a brick dwelling, tenant house, 2 stone milk houses, a bank barn, 40 by 60 feet, with 5 other out buildings.

The orchard is of 16 years' growth, all selected fruit from the east, of 2000 bearing trees, the fruit alone of which will yield from $1000 to $2000 per year.

The Nursery contains from 150,000 to 200,000 fruit, ornamental and evergreen trees, of 1 to 6 years' growth, with stock and seed beds. $2000 worth of trees were sold from it last year. If four times the above number were propagated, it would not be too much for the demand.

The above Farm and Nursery will be sold at a great bargain, as the owner, who lives on it, is in a delicate state of health, and wishes to retire from business. Possession given in 30 days. 10 acres of wheat in the ground, $2000 insurance for 3½ years to come, with $100 of turnpike, will all go in. Said property is situated 4½ miles west of the city of Pittsburgh, on the turnpike to Washington.

TERMS.—One-third in hand; balance in ten years, with interest.
Apply to or address B. McCLAIN, Agt.,
February 1, 1854.—1t* No. 21 Fifth st., Pittsburgh, Pa.

Farm for Sale.

SAID Farm is pleasantly situated in the town of Leicester, Livingston county, N. Y., on the road leading from the Pine Tavern to Gibsonville, and half a mile from the latter place. It contains 140 acres of land, 115 of which are under good improvement, and well adapted to raising wheat and spring crops; the balance is timbered. It is well watered with durable springs of soft water, and has convenient buildings and a good young orchard of choice fruit. There are 36 acres of wheat on the ground. The above will be sold cheap, and terms made easy.

Also, can be had with the farm, if desired, at a fair price, 1 span of horses, 25 head of cattle, and 30 sheep, with a good set of farming tools.

Any further information can be had by calling on or addressing
CHARLES HOLMES,
February 1, 1854.—3t Gibsonville, Livingston Co., N. Y.

Canoga Spring Farm for Sale,

CONTAINING 260 ACRES OF LAND, 45 acres of valuable timber, chiefly White Oak, the remainder cleared and most of it in a good state of cultivation, and well adapted to all kinds of grains. It has on it a never-failing spring, which waters one hundred acres of the improved land, at all times, which makes it one of the very best farms for the rearing of stock in Western New York. The said premises are situated in and adjacent to the village of Canoga Lake, in the county of Seneca, N. Y. There is an excellent Grist Mill and two good Saw Mills within a few rods of the said farm; also, District Schools and Churches. Upon the said premises there are an elegant and commodious brick edifice, a tenant house, a carriage house, three barns, sheds and other necessary out-buildings—three young orchards, containing all kinds of the very best fruit. In short, it is a valuable and desirable property, and will be sold by the subscriber at a great bargain.

Direct to SAMUEL McINTOSH,
February 1, 1854.—1t* Canoga, Seneca county, N. Y.

THE HORTICULTURIST,
AND JOURNAL of RURAL ART AND RURAL TASTE.

THE HORTICULTURIST is a Monthly Journal, devoted to Horticulture and its kindred arts, Rural Architecture and Landscape Gardening. It is edited by P. BARRY, late Horticultural Editor of the Genesee Farmer, and author of that popular work, "The Fruit Garden." To those who cultivate FRUIT or FLOWERS, this work is indispensable, as it contains full directions for cultivation, as well as every thing new on the subject, either in this country or in Europe.

The HORTICULTURIST is beautifully printed on the best paper, with costly illustrations on wood and stone. It contains 48 pages, without advertisements, and each number has a full page engraving, on stone, of some rare fruit or flower, drawn from nature, by the best living artist in this line.

TERMS.—TWO DOLLARS PER ANNUM, in advance. A discount of twenty-five per cent. allowed to agents. Postmasters and others are invited to act as agents, to whom specimen numbers will be sent, free of postage, on application to
JAMES VICK, Jr., Publisher, Rochester, N. Y.

P. S.—A new volume commences on the first of January.
January 1, 1854.

Cuttings of the best Varieties of Basket Willow,

WITH directions for planting, for sale by
WM. H. DENNING,
Feb. 1, 1854.—1t* Fishkill Landing, Dutchess Co., N. Y.

JOHN SAUL, Washington City, D. C.,

HAS to offer to his patrons and the public the subjoined list of Nursery Stocks. The whole is of the finest description, in the best order, and will be sold reasonable:

200 Cedrus Africana, 6 to 9, and 12 to 18 inches.
1,000 do Deodara, 1 year seedlings.
500 do do 6 to 9 and 12 to 18 inches.
200 do do 2 to 3 feet.
500 Funebral Cypress, 4 to 6, and 6 to 9, and 9 to 12 inches.
1,000 Junipers, English, 6 inches.
1,000 do do 1 to 2, and 2 to 3 feet.
1,000 Pinus Excelsa, 1 year seedlings.
500 do do 9 to 12, and 12 to 24 inches.
8,000 Scotch Firs, 8 to 9 inches.
200,000 Silver Firs, 4 to 5, and 6 to 7 inches.
50,000 do do 7 to 8, and 8 to 9 inches.
10,100 do do 1 to 2, and 2 to 3 feet.
2,000 do do Webbiana, 4 to 5, and 5 to 6 inches
500,000 Norway Spruce, 4 to 6 inches.
500,000 do do 6 to 8 inches.
50,000 do do 9 to 12 inches.
10,000 do do 1 to 2, and 2 to 3 feet.
3,000 English Yews, 6 to 9, and 9 to 12 inches.
1,000 Irish do 1 to 2 feet.
10,000 Larch, European, 4 to 6 inches.
20,000 do do 1 to 1½, and 2 to 3, and 3 to 4 feet.
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February 1, 1854—1y

THE

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